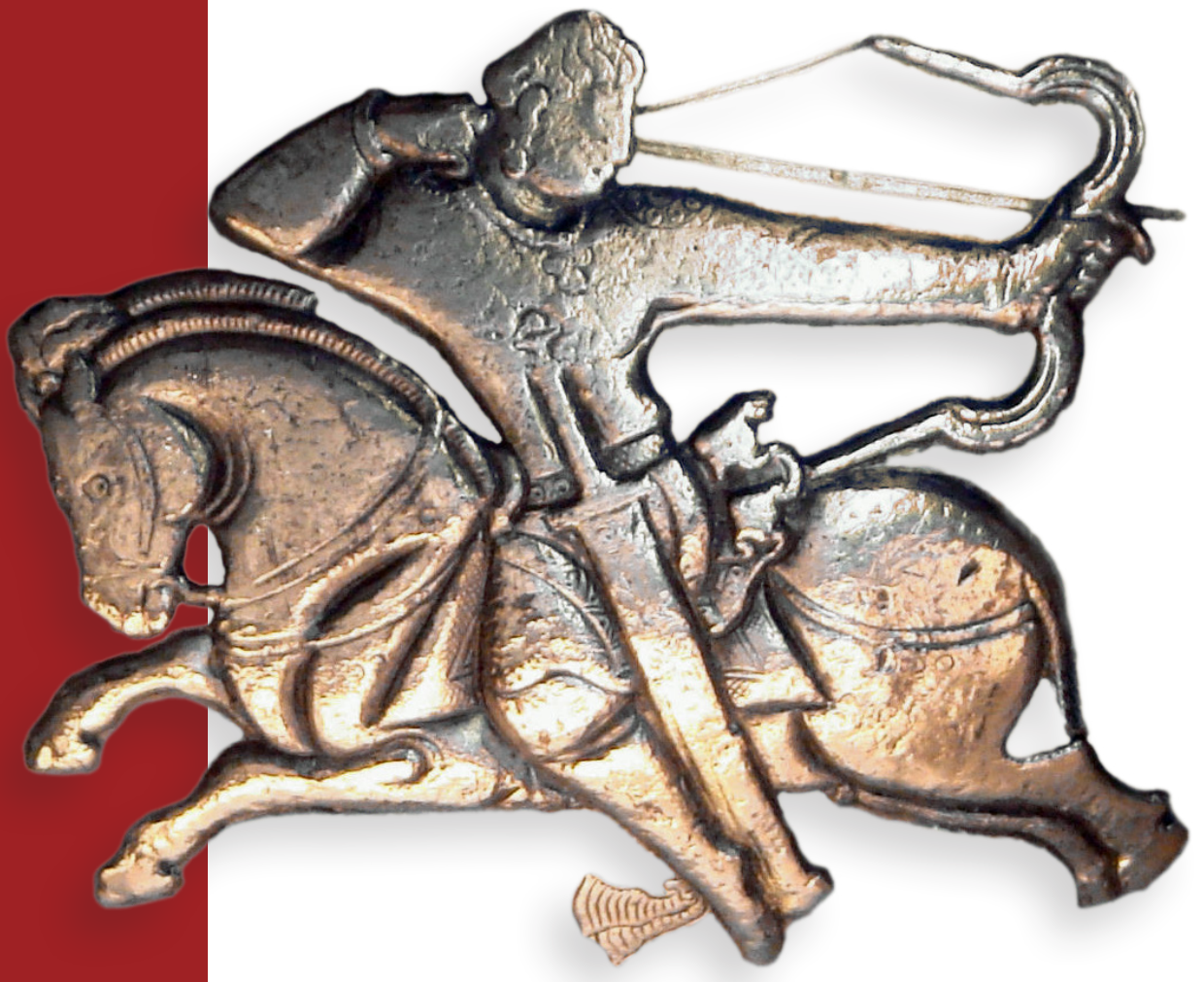
FVCINA DI MARTE
18

Cavalry Warfare

From Ancient Times to Today

EDITED BY
JEREMY BLACK



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FVCINA DI MARTE

COLLANA DELLA SOCIETÀ ITALIANA DI STORIA MILITARE

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COLLANA DELLA SOCIETÀ ITALIANA DI STORIA MILITARE

> L'expérience historique a favorisé la prise de conscience théorique. La raison, effectivement, ne s'exerce pas dans le vide, elle travaille toujours sur une matière, mais Clausewitz distingue, sans les opposer, la conceptualisation et le raisonnement d'une part, l'observation historique de l'autre.
>
> R. Aron, *Penser la guerre*, 1976, I, p. 456

Fondata nel 1984 da Raimondo Luraghi, la Società Italiana di Storia Militare (SISM) promuove la storia critica della sicurezza e dei conflitti con particolare riguardo ai fattori militari e alla loro interazione con le scienze filosofiche, giuridiche, politiche, economiche, sociali, geografiche, cognitive, visive e letterarie. La collana *Fvcina di Marte*, dal titolo di una raccolta di trattati militari italiani pubblicata a Venezia nel 1641, affianca la serie dei Quaderni SISM, ricerche collettive a carattere monografico su temi ignorati o trascurati in Italia. Include monografie individuali e collettive di argomento storico-militare proposte dai soci SISM e accettate dal consiglio scientifico.

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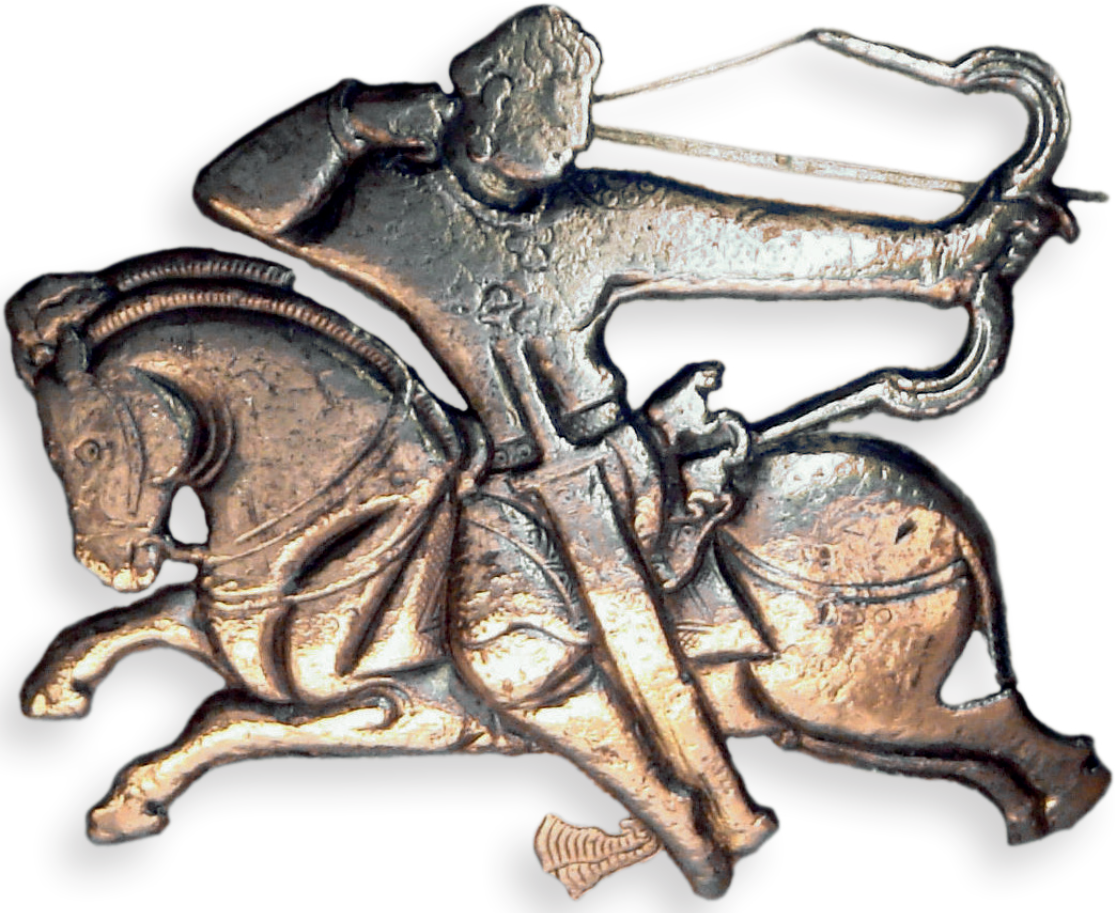

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Hephthalite horseman on British Museum bowl 460-479 CE British Museum notice, Original photo by User: PHGCOM, contoured by myself पाटलिपुत्र , 18 July 2017, CC SA 3.0 Unported license (Wikimedia Commons).

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Cavalry Warfare. From Ancient Times to Today: Introduction

Jeremy Black

Anachronistic, even redundant? The past significance of cavalry warfare and the extent to which this continued into the twentieth century are elements that have become increasingly prominent over recent years[1] for a number of reasons which are illustrated and analysed in the following collection. Place and time, two key elements in historical analysis, are at play. The first, as several contributors demonstrate, is one that matches the attempt to move beyond a Western coverage, contextualisation, categorisation and chronology. Once military history devotes due attention to Asia, where roughly or at least two-thirds of the world's population has always apparently lived for at least the last two millennia if not longer, then cavalry warfare should come to a prominent role, if not to the fore; although it is important to note that 'Asia,' a vast area, was far from a uniform military environment.

So also for an account of European warfare in which Eastern Europe receives sufficient attention. Focusing on Transylvania, Florin Ardelean offers the perspective of Eastern European light cavalry. Again Eastern Europe was far from a uniform environment, and the role of cavalry in Hungary and Poland was not matched to the same extent in the Balkans where forage was less present and the terrain more mountainous. As a result, the Balkans was far more an infantry environment. Again, even so, it is possible to refine the approach. Thus, in Greece, Thessaly saw a degree of cavalry operations not matched in Attica, Epirus, Boetica or the Peloponnese. In his essay, Alexander Querengasser discusses the influence of Eastern European practices in Western European developments in the sixteenth and seventeenth centuries, an approach that is also helpful for other periods.

This analysis of Eurasia may not help with the equivalent of Halford Mackinder's outer periphery of regions – Australasia, sub-Saharan Africa, and the Americas, in all of which horses were absent until European expansion – but

1 See also J. Black, *Cavalry: A Global History* (Barnsley, 2023).

they occupied a distinct minority of the world's population, and certainly did so prior to the mid-nineteenth century, after which Australasia and the Americas saw a rapid increase.

Chronology also comes in when discussing the relative significance of cavalry conflict, for, in place of the idea that gunpowder weaponry spelled triumph for the infantry, as in some conventional accounts of the rise of Western warfare, it is apparent that such weaponry could be, and was, used by cavalry. Indeed, the firepower and mobility possibilities offered by mounted archery was in practice reframed. Separately, the very idea of a major, even more, transformative impact and significance for gunpowder weaponry has been questioned and, at least redated.

In crude terms, the obsolescence of cavalry has been queried and redated. Again, this collection contributes strongly to this. Thus, in his account of European cavalry in 1815-71, Gervase Phillips draws instructive attention to a mid-century cavalry revival and suggests the need to be sceptical about the idea of tactical revolutions based on innovative weapons. With a thoughtful reflection of more general validity, he suggests that the earlier sense in the decades after Waterloo of a decay in cavalry was a consequence of the enervating effects of peace. This underlines the need to consider evidence carefully, not least by focusing on the mood of commentary. More generally, Phillips' work underlines the place and value of revisionism in military history, and thereby directs attention to the poor conceptual, methodological and empirical underpinnings of many of the assumptions advanced as standard historiographical building blocks.

Lastly, as again seen in this collection, there has been interest in aspects of cavalry beyond the horse, notably mechanised warfare in the shape of tanks and armoured cars, and, subsequently, with drones. Thus, in 1940, the British Expeditionary Force in France employed armoured cars with cavalry-like tactics. This approach emphasises the significance of concepts, doctrine, and tactics (none of which was fixed), rather than the exact nature of fighting, as well as the appropriateness of care in adopting a simple account of anachronism.

The need to consider the transferability of cavalry practices and ideas, and, at times, influence even prevalence, deserves more attention. It was significant for example in the response to air power by cavalrymen who saw it not only as a threat and opportunity, but also as an analogue for which cavalry concepts could be applied.[2]

2 Lori Henning, *Harnessing the Airplane: American and British Cavalry Responses to a New Technology, 1903-1939* (Norman, Ok., 2019).

Major-General Eric Dorman-Smith, the iconoclastic Deputy Chief of Staff for the British Eighth Army in North Africa, observed in 1942:

> 'In the Middle East Command, during the autumn of 1941, there arose the tactical heresy which propounded that armour alone counted in the Desert Battle, therefore the British … should discover and destroy the enemy's equivalent armour, after which decision the unarmoured infantry divisions would enter the arena to clear up what remained and hold the ground gained.'

Dorman-Smith contrasted this with their German opponents, Erwin Rommel's *Afrika Korps*, and its tactical preference for a 'mixed formation of all arms'; and he attributed British deficiencies to the sway of generals with a cavalry background:

> '… the romantic cavalry mystique of horsed warfare [led to] basic tactical fallacies … the dichotomy between the unarmoured infantry divisions and the relatively "uninfaterised" armoured divisions.'[3]

His account has enjoyed some success, not least as a commentary on the problems posed by cavalry spirit, and his attitude was certainly shared by Field Marshal Bernard Montgomery, later Commander of the Eighth Army.

This volume hopefully will encourage more attention being devoted to cavalry. Such attention is not only highly important for history but also the present, to a degree that is not widely understood. In part, this reflects the image of cavalry, a theme in Stephen Morillo's contribution where he refers to "mythical status" and "iconic symbol."[4] The "cavalry spirit" was seen as particularly important to morale and to mounting attacks, and thus crossing the "killing ground" and, thereafter, sustaining the assault. This approach is sustained in the arts, for example the 2023 film *Napoleon*, where the emphasis characteristically was on charging cavalry and not on its role as a means for reconnaissance or delivering firepower. Indeed, Napoleon was shown as a cavalry leader which was very much not his background, forte or interest, which were all in the artillery.

The emphasis in the presentation of cavalry on mobility and shock combined can lead, however, to an underplaying of a range of factors, from mounted fire-

3 Manchester, John Rylands Library, Special Collections, Dorman-Smith papers, GOW/1/2/2, pp. 33, 54, 1/2/1, p. 6

4 See also J. Gommans, 'Java's Mongol Demon. Inscribing the Horse Archer into the Epic History of Majapahit' in K. Rafael and L. Manju (eds), *Herstory. Historical Scholarship between South Asia and Europe: Festschrift in Honour of Gita Dharampal-Frick* (Heidelberg, 2018), pp. 249-59.

power to the strength of infantry. Timothy Dawson emphasises the practicalities of combat-riding.

Moreover, there is no one context for cavalry, whether tactical, operational, sociological, environmental, economic and political. As a consequence, there is no single trajectory for development against which circumstances can be assessed. As a result, it should not be discussed in terms of misguided, indeed curious survivalism, as with the use of Polish cavalry in 1939, a use that in practice was better informed than may be suggested by the critical portrayal in Axis propaganda.[5] In this and other instances of cavalry warfare, there were reasons for choices and the latter were not without value. That, again, is more generally the case with military history.

5 J. Czarnecki, 'The Rebirth and Progress of the Polish Military During the Interwar Years,' *Journal of Military History*, 83 (July 2019), pp. 747-68.

When the danger comes from afar
The horsemen in Classical Greece

Alessandro Carli*

Horsemen between state of art and new perspectives

The common reader as well as the insider within the academic debate is faced with two tendencies regarding the cavalry and her consequential military role for the Greeks in the Classical period. The major one, which can be considered conventional for the approach and the attention reserved to cavalry, leans toward an auxiliary position among the armies, with horsemen involved in overlooked tasks. From scouting in the enemy's territories to the covering infantry during retreats even to various skirmishes, cavalry is almost always confined to synthetic chapters. Not infrequently cavalry is paired up with other soldiers who were notoriously regarded as lower-rankings, such as light infantry, archers and javelin throwers[1]. Nevertheless, even if many tasks just mentioned according to the sources were the main prerogatives up to horsemen, this traditional approach is ascribed to the obstructing presence of the hoplites. According to this orthodox account, cavalry played a diriment role subsequently only from the Macedonian rise[2]. In compliance with the mainstream

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1 The classical outlook: George B. Grundy, *Thucydides and the History of His Age*, John Murray, London, 1911, pp. 277-281. On this reading see Donald Kagan – Gregory F. Viggiano, «The Hoplite Debate», in Donald Kagan – Gregory F. Viggiano (eds.), *Men of Bronze. Hoplite Warfare in Ancient Greece*, Princeton University Press, Princeton, p. 11. The consequences of this kind of interpretation regarding cavalry and light troops are still clear in John Lazenby, «Hoplite Warfare», in John Hackett (ed.), *Warfare in Ancient World*, Facts on File, New York – Oxford – Sydney, 1989, pp. 76-78. Cf. Pierre Ducrey, *Guerre et guerriers dans la Grèce antique*, Hachette Littératures, Fribourg, 1999, pp. 81-85. See Graham Wrightson, *Combined Arms Warfare in Ancient Greece. From Homer to Alexander the Great and His Successors*, Routledge, London – New York 2019, pp. 104-105 who quotes other previous studies too.

2 Due to some structural differences, we do not handle the employment of mounted troops and annexed specific innovations by Philip II and Alexander the Great: cf. briefly William W.

narrative[3], which affected even specialised texts about cavalry[4], hoplites monopolised ancient land battles more within academic disputes than ancient battlefields, and, as a consequence, the debate regarding warfare among poleis took a well-define turn. There is no need to overstress how much this view cast a shadow over proficient research to reach the many-sided features of Greek warfare, including the effectiveness of horsemen. However, from some ground-breaking studies aimed to challenge the current interpretation[5], opportunely the orthodox view concerning hoplites started to lose ground giving way to a less monolithic outlook. Therefore, what was the main narrative with the hoplites as the foremost actors in the ancient battlefields is bound to crumble under the pressure of a more balanced approach, where warfare was not more portrayed through some prearranged points. By the dismantling of the hoplites' narrative mainstream in the halls of academia which has some legacy even now, other units become objects of interest without being regarded as simply auxiliary agents among the armies[6]. As a result, emerges the second tendency which is prone to foreground to what extent cavalry was resolutive on many occasions[7]. If this recent scholarship gets

Tarn, *Hellenistic Military & Naval Developments*, Cambridge University Press, Cambridge, 1930, pp. 58-60 and Ian Worthington, *By the Spear: Philip II, Alexander the Great, and the Rise and Fall of the Macedonian Empire*, Oxford University Press, Oxford, 2014, pp. 35-37. In addition to the seminal study of Peter A. Brunt, «Alexander's Macedonian Cavalry», *The Journal of Hellenic Studies*, 83, (1963), pp. 27-46, cf. Matthew A. Sears – Carolyn Willekes, «Alexander's Cavalry Charge at Chaeronea, 338 BCE», *The Journal of Military History*, 80, (2016), pp. 1017-1035.

3 Unavoidable the pictures made by Fernando Echeverria, «The Nature of Hoplite Warfare», in Waldemar Heckel – F. S. Naiden – Edward E. Garvin – John Vanderspoel (eds.), *A Companion to Greek Warfare*, Wiley Blackwell, Hoboken, 2021, pp. 75-87.

4 Alexander Blaineau, *Le Cheval de guerre en Grèce ancienne*, Presse Universitaires de Rennes, Rennes, 2015, p. 21.

5 Hans van Wees, *Greek Warfare. Myths and Realities*, Duckworth, London, 2004 is the turning point for further researches. The current tendencies among the academic debate are reunited in the volume by Roel Konijnendijk – Cezary Kucewicz – Matthew Lloyd (eds.), *Brill's Companion to Greek Land Warfare Beyond the Phalanx*, Brill, Leiden – Boston, 2021.

6 Cezary Kucewicz – Matthew Lloyd – Roel Konijnendijk, «"*Not Many Bows*"? Light-Armed Fighters of the Tenth through Fourth Centuries», in Roel Konijnendijk – Cezary Kucewicz – Matthew Lloyd (eds.), *Brill's Companion to Greek Land Warfare Beyond the Phalanx*, Brill, Leiden – Boston, 2021, pp. 205-235.

7 Some preliminary remarks are pointed out in Roel Konijnendijk, *Classical Greek Tactics. A Cultural History*, Brill, Leiden – Boston, 2018, pp. 102-103. The most up to date study is Roel Konijnendijk, «Cavalry and the Character of Classical Warfare», in Roel Konijnendijk – Cezary Kucewicz – Matthew Lloyd (eds.), *Brill's Companion to Greek Land Warfare Beyond the Phalanx*, Brill, Leiden – Boston, 2021, pp. 169-204. Although, as it will emerge in the following pages, we distance ourselves from some conclusions opting for another perspec-

the credit for shedding light on sources and bringing out several elements of the military proficiency of cavalry, some overinterpretations can crop up. From a necessary refreshed reassessment of sources, we believe that some overreading came out to reach a ground-breaking conclusion in contrast to the traditional narrative. If we adhere to the reading which is argued to demonstrate, for instance, that even during the Classical period the head-on assault against heavy infantry was employed as well as come out effective, a couple of objections will rise. Firstly, the sources quoted to achieve that conclusion seem to exclude this pioneering interpretation[8] and, most importantly, there were a basic hindrance. In the absence of stirrups, direct assaults were precarious for riders as for horses even in the Hellenistic period without resorting to some tricks and specific situations[9]. Moreover, even though these studies have embraced the question concerning the absence of mounted units in some regions, none of them has given sufficient consideration to the proficient employment of horsemen when feasible by these communities. Even most up to date inquires have failed to consider why on many occasions cavalry disappears from the narrative outlined by the sources. Indeed, even if the ancient historians enumerate the presence, sometimes substantial, of horsemen before some major and minor fights, thse figures vanish from the battle's description, leaving the reader in a state of uncertainty.

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tive, the latter study of Konijnendijk remains seminal and a real must for further research on cavalry. Cf. Carolyn Willekes, «Cavalry Battle in Greece and Hellenistic East», in Waldemar Heckel – F. S. Naiden – Edward E. Garvin – John Vanderspoel (eds.), *A Companion to Greek Warfare*, Wiley Blackwell, Hoboken, 2021, pp. 88-98.

8 Roel Konijnendijk, *Cavalry and the Character*, cit. p. 185 n. 9 is still opent to doubts: despite some confidence on this point in the text, at the same time in the footnote he wishes for some caution, after the mention of some sources, which, however, allow us to argue another reading. During the battle of Plataia, the Persian cavalry did not break through the Greek line, but simply was prevailing when the Greek where only three hundred (Hdt., IX 23.2: «ἕως μέν νυν μοῦνοι ἦσαν οἱ τριηκόσιοι, ἐσσοῦντό τε πολλὸν») and Konijnedijk does not consider that, a few lines later, the Greeks all together in formation fought the enemy's cavalry off hindering the head-on attack (Hdt., IX 25.1: «οἱ δὲ Ἕλληνες ὡς τὴν ἵππον ἐδέξαντο προσβάλλουσαν καὶ δεξάμενοι ὥσαντο, ἐθάρσησαν πολλῷ μᾶλλον»). Regarding the Thucydides' compliment on the Macedonian horsemen assaults against the Thracians, indeed the Athenian historian evaluate their valour and underlines that these horsemen were armoured (Thuk., II 100.5: «ἄνδρας ἱππέας τε ἀγαθοὺς καὶ τεθωρακισμένους»). This is the only one mention of this kind of equipment within the *Histories*, indeed the verb θωρακίζω is usually employed for other cavalries not Greek ones (cf. Persian: Xen., *Anab*., II 5.36; III 4.35; Cyr., III 3.27; VI 1.29; VI 1.50; VIII 8.22; Thracian: Xen., *Anab.*, VII 3.40), maybe to differentiate Greek armours.

9 See Edward M. Anson, «Hellenistic Land Warfare»», in Waldemar Heckel – F. S. Naiden – Edward E. Garvin – John Vanderspoel (eds.), *A Companion to Greek Warfare*, Wiley Blackwell, Hoboken, 2021, p. 45.

After a succinct outlook of the "usual" horseman during the Classical period, we deal with an extended reassessment of the major topics concerning the annexed military role in compliance with most recent research, embracing, however, a different perspective on some points. In conclusion of this study, we will briefly discuss the disappearance of cavalry in some historiographical narrative. A possible solution of this aporia relies on various perceptions of cavalry which were embedded toward Greeks. We will evaluate how some cultural patterns did not excluded the employment of horsemen but rather how much, at the same time, biased the Greeks in their perception of cavalry in comparison with other units.

The warhorse and his well off javelin-thrower

Regardless there were regions notoriously more suitable than others for horse breeding, everywhere in the Greek Mediterranean background the horse lived on as the par excellence privilege of aristocrats[10]. As expected, the value of the horse relied upon his quality and health. Epigraphical evidence in the 4th century suggests that a warhorse could cost approximately 700 drachmas, even though prices, of course, fluctuated[11]. Apart from the ordinary expenses for fodder, daily and veterinary care, it should be not overlocked that the aristocrat involved in a military campaign needed to acquire and nourish at least an additional lower quality horse which was ridden by his attendant. Because of this burdensome investment for wealthy individuals, who more than once were at odds with the military needs of their city, Athens boosted such citizens through subventions[12]. Furthermore, considering the horse's nature as a prey animal prone to be trig-

10 Oswyn Murray, *Early Greece*, Stanford University Press, Brington, 1980, pp. 192-208 explains the distinctive features of the aristocratic way of life. For the problems concerning the concept of aristocracy in Ancient Greece see Hans van Wees – Nick Fisher, «The trouble with "aristocracy"», in Nick Fisher – Hans van Wees (eds.), *"Aristocracy" in Antiquity. Redefining Greek and Roman Elites*, The Classical Press of Wales, 2015, pp. 1-57.

11 John H. Kroll, «An Archive of the Athenian Cavalry», *Hesperia: The Journal of the American School of Classical Studies at Athens*, 46.2, (1977), p. 89 and Ann Hyland, «War and the horse», in Brian Campbell – Lawrence A. Tritle (eds.), *The Oxford Handbook of Warfare in the Classical World*, Oxford University Press, 2013, p. 516.

12 For a study that gets down to the core of the matter see Eleonora Pischedda, «La cavalleria ateniese nel IV secolo. Un lusso utile?», *Annuario della Scuola Archeologica di Atene e delle Missioni Italiane in Oriente*, 91.3, (2015), pp. 77-87. Cf. Iain Spence, «Cavalry, democracy and military thinking in classical Athens», in David M. Pritchard (ed.), *War, Democracy and Culture in Classical Athens*, Cambridge University Press, Cambridge, 2010, pp. 113-118. For some cases of evasion of this service see Glenn R. Bugh, *The Horseman of Athens*, Princeton University Press, Princeton, 1988, pp. 71-74.

gered, the future warhorses had to be created from scratch to withstand the battle, including exposure to stridency, horrific sights and danger[13]. All these issues fostered time-consuming training which absorbed the horseman during his leisure time. Within this process directed toward a substantial availability of warhorses in case of a conflict, the polis, or it would be better to talk about Athens, the community that for obvious reasons we are more informed[14], moved in again. In this respect, Athens was remarkably vigilant to the horses' healthiness through the δοκιμασία, the passing muster, adopting the same attention also for the riders[15].

The horseman with his armour, fitness for riding and military skills was of paramount importance as well as the animal. To reach a sort of "typical" horseman, especially regarding his protections and weapons, nevertheless the modern reader is compelled to drop the concept of military uniform. The latter, as understood in later periods of History, was not fitting for Ancient Greece. In a world where the singular soldier was responsible for equipping himself with the gears he needed for possible fights there was no room for homogeneousness[16]. Far from arguing an absolute differentiation, it is proper to remember that each soldier provided weapons at his own expense, although, by the end of the Vth century, it is attested the intervention from the polis on this point[17]. Even with the money lent by the city, the rider chose his tools without any standard requirement. It is not a consequence, therefore, that Xenophon felt the need to put forward some advice to his contemporaries. On the basis of his clever horsemanship after a whole life between military expeditions from his twenties and riding during peacetime[18], he was perfectly familiar with the common mis-

13 Carolyn Willekes, *The Horse in the Ancient World. From Bucephalus to the Hippodrome*, I. B. Tauris, London – New York, 2016, p. 187 and *passim*. Cf. Carolyn Willekes, *Cavalry Battle*, cit. pp. 93-94.

14 For the loans founded at the enrolment see Eleonora Pischedda, *L'economia pubblica di Atene. Stato, finanze e società nel IV secolo a.C.*, Carocci, Rome, 2022, pp. 143-144 with further bibliography. Cf. David M. Pritchard, «The Horsemen of Classical Athens. Some Considerations of Their Recruitment and Social Brackground», *Athenaeum. Studi di Letteratura e Storia dell'Antichità*, 106, (2018), pp. 439-453; Id., *Athenian Democracy at War*, Cambridge University Press, Cambridge, 2019, pp. 53-63.

15 Christophe Feyel, *Δοκιμασια. La place et le rôle de l'examen préliminaire dans les institutions des cités grecques*, De Boccard, Paris, 2009, pp. 53-64.

16 On the debate regarding an alleged uniform, see Eleonora Pischedda, *La cavalleria*, cit. p. 79 n. 23, who rightly states that there was not a preestablished suit of armour dictated by the city.

17 Xen., *Hipp*., 1.23 and 9.5. On these sources Corrado Petrocelli, *Senofonte. Ipparchico. Manuale per il comandante di cavalleria*, Edipuglia, Bari, 2001, pp. 63-64. For allowances: Eleonora Pischedda, *L'economia pubblica*, cit. pp. 145-146.

18 On the equestrian knowledge of Xenophon on the basis of the two treaties: cf. John K. Ander-

takes of autoschediastic soldiers. By suggesting one kind of weapon rather than another one, Xenophon knows which ones work better and he is completely aware of the heterogeneity mainstream during his times[19]. In addition to an armour that enabled mobility to the right arm and a helmet appropriate for a good visibility as opposed to the Corinthian one[20], the academic debate has focused on the spear's type[21]. Yet, without disregarding to consider the absence of any standard, horsemen usually had a couple of javelins during the Classical period and a sword that, due to the vertical distance between the rider and his target, needed to be unlike the hoplitic one. It can be inferred that the first javelin was thrown meanwhile the second was left up to the rider, who, thanks to his skills, could even employ it as a spear[22]. According to this point, despite anyone explicit mention in the sources, likely the horsemen could have more than two javelins during fights, maybe with logistical support of their slaves[23]. Proof of the

son, *Xenophon*, Charles Scribner's Sons, New York, 1974, pp. 183-191; John Dillery, «Xenophon: the Small Works», in Michael A. Flower (ed.), *The Cambridge Companion to Xenophon*, Cambridge University Press, Cambridge, 2017, pp. 208-213.

19 In Xen., *Eq*., 12, since he stresses the dimension as well as the path of all pieces of the armour, clearly any standard lacks. On these recommendations John K. Anderson, *Ancient Greek Horsemanship*, University of California Press, Berkeley – Los Angeles, 1961, pp. 143-145.

20 For the problems regarding the lack of material evidence see always the reflections by Anthony A. Snodgrass, *Arms and Amour of the Greeks*, Thames and Hudson, London – New York, 1982[2], pp. 85-88. For a noteworthy assessment of the available sources with a systematic employment of images see Giuseppe Cascarino, *Senofonte, L'arte della cavalleria. Il manuale del comandante della cavalleria*, Il Cerchio, Rimini, 2007, pp. 18-23.

21 Cf. Robert E. Gaebel, *Cavalry Operations in the Ancient Greek World*, University of Oklahoma Press, Norman, 2002, pp. 29-30 and Glenn R. Bugh, «Greek Cavalry in the Hellenistic World: Review and Reappraisal», in Lee L. Brice, *New Approaches to Greek and Roman Warfare*, Wiley Blackwell, Hoboken, 2020, pp. 73-75 with all the sources. On the employment of javelins cf. Peter Hunt, «Military Forces», in Philip Sabin – Hans van Wees – Michael Whitby (eds.), *The Cambridge History of Greek and Roman Warfare. Volume I: Greece, the Hellenistic World and the Rise of Rome*, Cambridge University Press, Cambridge, 2007, p. 118; John W. I. Lee, «The Classical Greek Experience», in Brian Campbell – Lawrence A. Tritle (eds.), *The Oxford Handbook of Warfare in the Classical World*, Oxford University Press, Oxford, 2013, p. 151.

22 Xen., *Eq*., 12.12: «καὶ γὰρ ἐξαφεῖναι τὸ ἕτερον δυνατὸν τῷ ἐπισταμένῳ, καὶ τῷ λειπομένῳ οἷόν τε χρῆσται καὶ εἰς τὸ ἀντίον καὶ εἰς τὰ πλάγια καὶ εἰς τοὔπισθεν». The employment of τῷ ἐπισταμένῳ, literally "who knows how to do", denotes that using the javelin as a "classical" spear was not the rule. Interestingly, if we follow the description regarding training between a couple of horsemen (Xen., *Eq*., 8.10), Xenophon switches from the javelin to the spear, representing probably the same tool but its different employment on the basis of the situation.

23 In order to make the cavalry unit larger, Xenophon suggests to include grooms with weapons in the ranks, especially javelins (Xen., *Hipp.*, 5.6), therefore these slaves could furnish their masters if necessary. Xen., *Hell.*, VII 1.20-21 describes attacks and drawbacks of Syracusan

systematic employment of javelins, as the main weapon for the horseman, are the recommendation by Xenophon again. On the basis of previous episodes with first-hand experience, having suggested a certain type of javelin over another one, he prescribes to throw them in a long-range combat[24]. The rider, being an amateur, had time to turn back and to grasp the second javelin. Besides keeping fit and advisably skilled at dismounting, in order to hit the target during the ride constant training is the key to making autoschediastic dilettantes in proficient horsemen[25]. According to Xenophon, is up to the ἵππαρχος, the cavalry commander, to train assiduously. Other horsemen, urged to practice javelin-throwing, looked up to the ἵππαρχος as a model owing the recommended skills[26]. In compliance with the sources, albeit expensive for the riders and the community as well as onerous business for the former, the Greeks were receptive of the cavalry's importance. Now, arise the questions how many times horsemen were suitable and to what extent some poleis felt the need to employ them.

The advantages at home and the need of conspicuous horsemen abroad

Whenever an army held control over a territory, it instilled confidence and boldness in facing the enemy. Contrary to the traditional belief on the pre-em-

horsemen who dismounted during breathing spaces at some distance from the enemy; it is likely that servants during these moments joined their masters to supply them with further javelins. On this episode see briefly Maxime Petitjean, *La cavalleria nel mondo antico. Dagli Assiri alle invasioni barbariche*, 21 editore, Palermo, 2018, pp. 42-43.

24 When he suggests to employ the dogwood javelins due to the hardness instead of the cornelian ones (Xen., *Eq.*, 12.12), he bears in mind when year ago some Greek horsemen as scouts met by chance Persian ones. In this skirmish thoroughly outlined in the *Hellenika*, the spears/javelins employed by the Greeks broke after the contact with the enemy's javelins (Xen., *Hell*., III 4.13-14), but the close fight which occurred did not have an head-on assault. On this episode see Godfrey Hutchinson, *Sparta Unfit for Empire 404-362 BC*, Frontline Books, 2014, p. 19. As a consequence, the recommendations by Xenophon in his pamphlets were a consequence of his first-hand matured experience in Anatolia during the expedition under Agesilaus. On this point see Marek J. Olbrycht, «Agesialus' Cavalry Tactics at Narthacion and Coroneia (394 BC)», in Ryszard Kulesza – Nicholas Sekunda (eds.), *Studies on Ancient Sparta*, Gdańsk University Press, Gdańsk, 2020, p. 248.

25 Hunting with javelin-throwing was an additional training for warfare (Xen., *Cyn*., 1.18; 12.8-9). On the relationship between warfare and hunting see Louis Rawlings, «Alternative Agonies. Hoplite martial and combat experience beyond the phalanx», in Hans van Wees (ed.), *War & Violence in Ancient Greece*, The Classical Press of Wales, Swansea, 2000, pp. 243-245.

26 Cf. Xen., *Hipp*., 1.21; 25; 6.5; *Eq*., 7,1; 8.10; 12.13. On javelin-throwing cf. Norman E. Gardiner, «Throwing the Javelin», *The Journal of Hellenic Studies*, 1907, 27, 249-273; H. A. Harris, «Greek Javelin Throwing», *Greece & Rome*, 10.1, (1963), pp. 26-36.

inence of hoplites in open-field combat[27], now scholarship has embraced a different perspective. Without the support of horsemen, the hoplites alone as an unit were powerless. Cavalry, in this respect, ensured advantages such as mobility, enhanced visibility and, not less important, greater manoeuvrability for interventions in open grounds when necessary. The sources are unambiguous[28]. Nevertheless, excepting flat territories, it is important to not stress the complete adaptability of the cavalry, a constraint of which the Greeks were cognisant of. Regarding the evident limitations, as consummate in horsemanship, Xenophon is not equivocal every time he underscores how to strengthen the hooves as well as to accustom the future warhorse to various terrains[29].

Through their knowledge of the lay of the land, cavalry mitigated the impact of enemy troop damages[30]. When enemies were pillaging their region, horsemen targeted dispersed soldiers engaged in unrooting fields, thus hindering their work[31]. However, while cavalry's involvement prevented some invaders from further damaging territories, it cannot be overrated the efficacity of these interventions[32]. The defence of Attica in the course of the Peloponnesian War is exemplificatory[33]. At least, during some incursions, Athenian horsemen faced

27 Cf. F. E. Adcock, *The Greek and Macedonian Art of War*, University of California Press, Berkeley – Los Angeles – London, 1957, p. 7; Josiah Ober, «Hoplites and Obstacles», in Victor Davis Hanson, *Hoplites. The Classical Greek Battle Experience*, Routledge, London – New York, 1991, p. 173; Victor Davis Hanson, «Hoplite battle as ancient Greek Warfare. When, where, and why?», in Hans van Wees (ed.), *War & Violence in Ancient Greece*, The Classical Press of Wales, Swansea, 2000, pp. 206-208. These positions are biased, more or less implicitly, by Mardonius' words: Hdt., VII 9β.1: «ἐξευρόντες τὸ κάλλιστον χωρίον καὶ λειότατον, ἐς τοῦτο κατιόντες μάχονται». On this text see Roel Konijnendijk, «Mardonius' senseless Greeks», *Classical Quarterly*, (2016), pp. 1-12.

28 Roel Konijnendijk, *Cavalry and the Character*, cit. pp. 183-184.

29 The Athenian historian is concerned with that topic to the point of repeating it systematically (cf. Xen., *Hipp*., 1.6; 1.18; 1.19; 1.20; 8.3; 8.13; *Eq.*, 8.9).

30 On ravages see Jeanne Reames – Ann Haverkost, «Agriculture and Greek Warfare», in Waldermar Heckel et al. (eds), *A Companion to Greek Warfare*, Wiley Blackwell, Hoboken, 2021, pp. 286-298 with further bibliography.

31 Iain G. Spence, *The Cavalry of Classical Greece. A Social and Military History with Particular Reference to Athens*, Clarendon Press, Oxford, 1993, pp. 93-97. Cf. Leslie J. Worley, Hippeis. *The Cavalry of Ancient Greece*, Routledge, London – New York, 1994, pp. 83-87 and *passim*; Robert E. Gaebel, *Cavalry Operations*, cit. pp. 94-95.

32 We believe that Roel Konijnendijk, *Cavalry and the Character*, cit. p. 177: «A region defended by well-managed cavalry was all but immune to ravaging» is quite excessive.

33 On the Periclean strategy with horsemen's employment cf. Iain G. Spence, «Perikles and the Defence of Attika during the Peloponnesian War», *The Journal of the Hellenic Studies*, 110, (1990), pp. 91-109, who formulated the theorization of "mobile defence". Cf. Hugh J. Hunt-

Boeotian cavalry and, most importantly, the Athenians were compelled to come back home whenever the others Peloponnesians hoplites joined the fight[34]. Rapid interventions therefore were effective, but temporary due to the hoplites' involvement. Yet, in absence of these units for a mobile defence, the damages could be conspicuous and crushing down enemies became quite unworkable. It happened when the Athenians disembarked and damaged the Peloponnesian seashores without being interrupted. If the defenders finally turned up, the invaders put out again. In this regard, to circumscribe the unpredictable enemy agency, Sparta was compelled to recruit – apparently for the first time – horsemen to deal with the Athenian raids after the capture of Cythera[35]. Furthermore, in instances where light troops were alone during ravages, cavalry could inflicted harm and losses as occured outside Megara in 424[36]. Considering their knowledge of the terrain and the enemy position, it can be inferred that cavalry came out profitable whenever circumstances permitted, yet with some limits and for a short lapse of time.

Despite the systematic zealousness to arrange horsemen at home so as to defend the homeland, the Greeks, however, were not always eager to gather substantial cavalry from the opening of a campaign abroad over a long period of time. It seems that they remodelled the arrangements on the basis of the enemy. Actually, every time they came to know about the presence of cavalry in the enemy ranks, the Greeks become attentive to horsemen and tendentially hesitant about crossing open plains[37]. Following the "victory" of Cunaxa, the death of Cyrus, and the subsequent isolation of the Ten-thousand in the enemy territory deprived of local scouts and allies, their primary concern was the Per-

er, «Pericles' Cavalry Strategy», *Quaderni Urbinati di Cultura Classica*, 81.3, (2005), pp. 101-108, although he overstress some points.

34 Pericles sent always the Athenian horsemen to block the enemy advance guards who were unable to reach the fields near the city (Thuk., II 22.2), but afterwards they were reached by the hoplites. During the defence in the 427, while the Athenians obstructed the ravages conducted by light infantry, Thucydides is precise about their intervention, highlighting that they acted only when were enabled: Thuk., III 1.1: «καὶ προσβολαὶ, ὥσπερ εἰώθεσαν, ἐγίγνοντο τῶν Ἀθηναίων ἱππέων ὅπῃ παρείκοι».

35 Thuk., IV 55. See Nicolette Pavlides, «Non-Spartans in the Lakedaimonian Army: the Evidence from Laconia», *Historia: Zeitschrifte für Alte-Geschichte*, 69.2, (2020), pp. 172-173. On Spartan cavalry: Nicholas Sekunda, *Spartan Army*, Oxford, Osprey Military, 1998, pp. 46-48; John F. Lazenby, *The Spartan Army*, Stackpole Books, Barnsley, 2012, pp. 15-16.

36 Thuk., IV 72.2. On this episode see John E. Lendon, *Song of Wrath, The Peloponnesian War Begins*, Basic Books, New York, 2010, pp. 296-299 with subtle reflections.

37 It is clearly explained by Roel Konijnendijk, *Cavalry and the Character*, cit. p. 174.

sian cavalry[38]. Without disregarding the fact that likely the Persians' reputation regarding proficient horsemanship may have biased the Greeks too[39], this rooted fear was ascribable to the several uncharted open terrains to cover. During the march they would be an easy target for the enemy's arrows, and, therefore, the Greek army was bolstered whenever found high grounds. Even though, to reach the root of this terror, it is convenient to bear in mind that Xenophon stresses twice how much the Greeks were at a deadlock, ineffective in overwhelming the enemy, in absence of horsemen. Lacking the same kind of unit, they were unable to challenge the Persians, and, as a consequence, that heightened the fear of Achaemenid horsemen. In other words, they weighted the role of this unit and its annexed dangers on the basis on the enemy's availability to deploy it in favourable circumstances[40]. A similar dynamic occurred during the expedition in Anatolia led by the Spartans in 399-395. After the starting moment not decisive in the open ground with Thibron and Derkylidas[41], where they perceived Persian horsemen a real obstacle. In a second moment, despite a conspicuous army with various units, the king Agesilaus was compelled to gather a consistent cavalry from the local cities to challenge the Persians. Not long after, during his obligated return on the mainland, Agesilaus was able to employ horsemen successfully

38 During the *Anabasis* (among the many situations cf. Xen., *Anab*., III 1.2; 4.24; VI 5.29), Xenophon clearly highlights this concern. However, in a notorious passage where Persian horsemen are outlined as weak (Xen., *Anab.*, III 2.18-19), Xenophon downplays the cavalry' role to hearten his fellows. See Otto Lendle, *Kommentar zu Xenophon Anabasis (Bücher 1-7)*, Wissenschaftliche Buchgesellschaft, Darmstadt, 1995, p. 160. Cf. Worley, Hippeis. *The Cavalry*, cit. 124. According to our point of view, it should not disregard that the audience was made up by experienced soldier and Xenophon had to live up with their expectations as well as shared sensitivity. In other words, he needed to touch plausible topics.

39 On Persian cavalry cf. Alexander K. Nefedkin, «The Tactical Development of Achaemenid Cavalry», *Gladius*, 26, (2006), 5-18; Michael B. Charles, «Achaemenid Elite Cavalry: From Xerxes to Darius III», *The Classical Quarterly*, 65.1, (2015), pp. 14-34; Christopher Tuplin – Bruno Jacobs, «Military Organization and Equipment», in Bruno Jacobs – Robert Rollinger (eds.), *A Companion to the Achaemenid Persian Empire. Volume II*, Wiley Blackwell, Hoboken, 2021, pp. 1171-1175. However, the most acribic analysis of Persian horsemen remains Christopher Tuplin, «All the King's Horse: in Search of Achaemenid Persian Cavalry», in Garret G. Fagan – Matthew Trundle (eds.), *New Perspectives on Ancient Warfare*, Brill, Leiden – Boston, 2010, pp. 101-182.

40 Philip Sidnell, *Warhorse. Cavalry in Ancient Greece*, Continuum Books, London, 2006, pp. 50-52.

41 Cf. John W. I. Lee, «Tissaphernes and the Achaemenid Defence of Western Anatolia, 412-395 BC», in Jeremy Armstrong (ed.), *Circum Mare: Themes in Ancient Warfare*, Leiden – Boston, 2016, pp. 277-279; Paolo A. Tuci, «Tibrone, un armosta poco intraprendente? Note su uno spartano in Asia», *Erga – Logoi. Rivista di Storia, letteratura, diritto e culture dell'antichità*, 10, (2022), pp. 53-92.

even against the Thessalians[42]. This strategic shift reflected the Greek' inclination to collect consistent cavalry units only when facing up to well-equipped adversaries who took advantage from the conformation of the territory too. It seems, therefore, that the Greeks enrolled conspicuous cavalry when needed, not from the outset and it is likely, in this regard, high costs to sustain did not help especially for expeditions abroad. According to this point, when the danger was not imminent, some Greeks were not necessarily forearmed systematically with cavalry. When the Athenian assembly was summoned up to deliberate on a possible expedition against Syracuse, Nicias opposed to this enterprise at the beginning. Yet, after he grasped the penchant of his fellow-citizens, Nicias drew attention many times to the powerful cavalry of the enemy, without suggesting, at any rate, an estimate[43]. As a consequence, if Athens really wanted to sail and not be obstructed in Sicily by Syracusan horsemen, they should have set up a conspicuous cavalry without overlooking every detail. The following mobilization was in grand style, still, despite Nicias' forward-looking warnings, nevertheless Athens did not reshape her measures regarding horsemen[44]. Maybe the prospect of conducting a siege or other kinds of military operation overshadowed their calculation. The onsite support by her allies and the next dispatch as consequence of Nicias' request did not prevent nevertheless the Syracusans to cause them fatal damages[45]. From these sources, thus, it can be argued that,

42 Cf. Xen., *Hell.*, IV 3.4-9; *Ages*., 2.2-5; Plut., *Ages*., 16.5. Cf. Robert E. Gaebel, *Cavalry Operations*, cit. p. 121; Marek J. Olbrycht, *Agesialus' Cavalry Tactics*, cit. p. 249. On Thessalian horsemen see Leslie J. Worley, Hippeis. *The Cavalry*, cit. pp. 28-32.

43 In addition to the admonitions before the departure (Thuk., VI 20.4; 21.1; 6.22) it looks like a sort of Nicias' "obsession" since during the expedition he highlights the problems caused by enemy horsemen (Thuk., VI 68.3; VII 11.4; 13.1). On Nicias' admonitions in front of the assembly: Henry D. Westlake, *Individuals in Thucydides*, Cambridge University Press, Cambridge, 1968, pp. 171-173. On the cavalry potential in Sicily cf. Iain G. Spence, *The Cavalry*, pp. 30-32. Joshua R. Hall, «The Western Greeks and the "Greek Warfare" Narrative», in Roel Konijnendijk – Cezary Kucewicz – Matthew Lloyd (eds.), *Brill's Companion to Greek Land Warfare Beyond the Phalanx*, Brill, Leiden – Boston, 2021, pp. 282-283.

44 Athens sent thirty horsemen, probably as scouts (Thuk., VI 43). See Glenn R. Bugh, «Thucydides 6.43 and 6.64.1: The Case of the Thirty Missing Athenian Horsemen», in Robert I. Curtis (ed.), *Studia Pompeiana & Classica in honor of Wilhelmina F. Jashemski*, Orpheus Publishing, New Rochelle – New York, 1989, pp. 25-29. On Thuk., VI 31 see Lisa Kallet, *Money and the Corrosion of Power in Thucydides. The Sicilian Expedition and Its Aftermath*, University of California Press, Berkeley – Los Angeles – London, 2001, pp. 48-63.

45 For the role of Syracusan horsemen in the Athenian defeat cf. Worley, Hippeis. *The Cavalry*, cit. pp. 104-119; Lee B. Brice, «The Athenian Expedition to Sicily», Brian Campbell – Lawrence A. Tritle (eds.), *The Oxford Handbook of Warfare in the Classical World*, Oxford University Press, 2013, pp. 230-233. Richard Evans, *Ancient Syracuse. From Foundation to*

in spite of the perception of cavalry's efficacity in several circumstances, some Greeks summoned horsemen only when strictly necessary. At this moment, it is proper to survey whenever, due to their presence, horsemen played a role and how much effective.

Covering or slaughtering the hoplites

On the basis of sources, a thorough understanding of the effectiveness of horsemen during battles requires paradoxically one of the opposing forces was unsupplied with horsemen. Ancient historians, actually, tend to draw attention to the role of horsemen when one side is devoid of this unit enabling the opposing cavalry to join the fight as needed. Following a defeat against Nicias, the Spartan Gylippos wanted to avoid the previous misuse of available Syracusan troops, thus he deployed horsemen and javelin-throwers against the left Athenian flank. As soon as the latter gave up under the pressure from the Syracusan horsemen and retreated, the rest of their forces fled too[46]. Similarly, during a battle which took place at Solygeia in 425, Athenian cavalry supported their hoplites against Corinthian infantry, who suffered significant casualties during their subsequent flight. To evaluate the impact of horsemen during this battle, Thucydides stresses the absence of Corinthian horsemen, permitting the Athenian cavalry to operate freely[47]. These episodes, therefore, underscore the disadvantages faced by the army lacking cavalry as well as another key point regarding cavalry's effective employment. It is not a coincidence, as we shall shortly see, that historical narratives stress the role of horsemen particularly when infantry suffered heavy losses and inconveniences.

It is remarked that picked battles in themselves were not a butchery for every last man, rather fights during Classical period reached a turning point whenever one of the two opponent broke ranks and, then, fled[48]. Just during flights

Fourth Century Collapse, Routledge, London – New York, 2016, pp. 142-144

46 Thuk., VII 6.2-3. Paul A. Rahe, *Sparta's Sicilian Proxy War. The Grand Strategy of Classical Sparta 418-413 B.C.*, Encounter Books, New York – London, 2023, pp. 175-177.

47 Thuk., IV 42-44. Cf. John B. Salmon, Wealthy Corinth. A History of the City to 338 BC, Clarendon Press, Oxford, 1984, p. 319; Ronald S. Stroud, «Thucycides and the Battle of Solygeia», *California Studies in Classical Antiquity*, 4, (1971), pp. 227-247; Id., «Thucydides and Corinth», *Chiron*, 24, 1994, pp. 286-287. This episode clearly demonstrates how much the lack of cavalry weighted during the battle, in fact Thuk., IV 44.1: «ἦσαν γὰρ τοῖς Ἀθηναίοις οἱ ἱππῆς ὠφέλιμοι ξυμμαχόμενοι, τῶν ἐτέρων οὐκ ἐχόντων ἵππους».

48 Peter Krentz, «Casualties in Hoplite Battle», *Greek, Roman and Byzantine Studies*, 26.1, 1985, pp. 13-20; Roel Konijnendijk, *Classical Greek Tactics*, pp. 178-187.

then possible slaughters took place and horsemen played a significant role. In this respect, if the battle reached a bad turn, horsemen covered their retreating comrades, throwing javelins to deter bold pursuers. Cavalry ensured a safe withdrawal of hoplites, avoiding conspicuous casualties. Therefore, thanks to horsemen, hoplites and light-troops could reach a safe place unharmed. At Mantinea in 418, Athenian horsemen covered their hoplites deployed on the left wing. Despite the silence of Thucydides on their specific involvement, cavalry likely barraged the Spartans during the encirclement. Afterwards, when Agis conducted the manoeuvre on his defeated left wing, the horsemen's support allowed the Athenian hoplites to retreat safely[49]. During the Sicilian expedition, skilled Syracusan horsemen covered their fellows to the Athenians were unable to reach a consistent victory after the enemy' route[50].

On the other hand, in successful situations where one army overwhelmed the other, horsemen played a crucial role in pursuing and inflicting further casualties on the defeated. As opposed to the traditional perspective of warfare managed by gentlemen' rules, the Greeks felt greatest pleasure when they inflicted the most numerous casualties to the enemy[51]. Just during the retreat a bloodshed could take place with the consequent satisfaction of the winner. In this respect, due to the obvious mobility and the chance to target enemies from behind, the presence of horsemen proved to be crucial. At Delion in 424, the Theban Pagondas hid two cavalry's unit behind a hill. During the strong fight, when the Athenians were overwhelming on the centre and the right wing, Pagondas had ordered the hidden horsemen to join their fellows if necessary. As soon as the Athenians spotted the cavalry, they assumed another army was arriving. The panic thwarted their previous results[52]. During the beginning retreat and the

49 On this battle see for further bibliography Wojciech Duszyński, «The Phalanx Drift to the Right. The Polemarchs' Cowardice, Agis' Incompetence? Thucydides' Account if the Battle of Mantinea in 418 BC», *HIMA. Revue international d'Histoire Militaire Ancienne*, 12, (2023), pp. 347-366.

50 See Philip Sidnell, *Warhorse. Cavalry*, cit. pp. 45-46.

51 Exemplificatory Xen., *Hell.*, IV 4.12. On this pivotal topic cf. Peter Krentz, «Fighting by the Rules: The Invention of the Hoplite Agon», *Hesperia: The Journal of the American School of Classical Studies at Athens*, 70.1, (2002), pp. 30-32; John C. Dayton, *The Athletes of War. An Evaluation of the Agonistic Elements in Greek Warfare*, Edgar Kent, Toronto, 2006, pp. 73-76; Hans van Wees, «Defeat and Destruction: The ethics of ancient Greek warfare» in Margit Linder – Sabine Tausend (eds.), *"Böser Krieg". Exzessive Gewalt in der antiken Kriegsführung und Strategien zu deren Vermeidung*, Grazer Universitätsverlag, Graz, 2011, pp. 71-73.

52 For the Delion battle see the reconstruction of John F. Lazenby, *The Peloponnesian War. A military study* pp. 87-91. On the sources of Delion see the Salvatore Tufano, «The Speech of

consequent flight Boeotian horsemen slaughtered the terrified Athenians trying to save themselves. After the body count, the hoplites died were just under five-hundred, unknown was the number of light infantries but remarkable, as Thucydides specifies. Most likely, during the pursuit after the battle of Delion took part light infantries too. The strict collaboration with this other unit was one of the key trait of the horsemen's employment[53]. Whenever the Greeks employed at the right moment combined-arms the outcome of the battle could be devastating for the defeated. At Spartolus in 429, the synergy of light troops and horsemen brought about the victory for the Chalcideans leading four hundred and thirty Athenians to death[54]. The same combined-arms potential was exploited by the Spartan Brasidas at Amphipolis in 422. After an opening blitz attack which dismayed enemies, the following arrival of cavalry joined by peltasts was decisive. During the slaughter six hundred Athenians lost their lives, felt even the general Cleon too[55]. Even though these episodes own a different development, the sources underscore how many times horsemen proficiently helped comrades or, more frequently, pursued slaughtering enemies. All these source clearly demonstrate how many occurrence cavalry could be employed proficiently to protect fellow foot soldiers as well as slaughter enemies whenever opportunity arose.

Conclusions and further suggestions on the basis of Greek background

If we inspect warfare among poleis without a perspective, a product of a former scholarship, and we take into account precious suggestions which are advanced in recent years, horsemen will emerge in all-respects as a real proficient agent among Greek armies. Denying the cavalry's role means dismissing

Pagondas (Thuk., 4.92) and the Sources of the Battle of Delion», *Klio*, 103.2, 2021, pp. 1-27.

53 For light infantry see the seminal research of Cezary Kucewicz – Matthew Lloyd – Roel Konijnendijk, *"Not Many Bows"*, cit. pp. 205-235.

54 Thuk., II 79. On this battle Paul M. Bardunias – Fred E. Ray J. R., *Hoplites at War. A Comprehensive Analysis of Heavy Infantry Combat in the Greek World, 750-100 BCE*, McFarland & Company, Jefferson, 2016, p. 144. According to Everett L. Wheeler, «Land Battles» in Philip Sabin – Hans van Wees – Michael Whitby (eds.), *The Cambridge History of Greek and Roman Warfare. Volume I: Greece, the Hellenistic World and the Rise of Rome*, Cambridge University Press, Cambridge, 2007, p. 220 without the same kind of units the Athenians were unable to defend themselves.

55 Thuk., V 10. See Marco Bettalli, «La morte di un conciapelli sotto le mura di Anfipoli», *Nuova Antologia Militare. Rivista interdisciplinare della società italiana di storia militare*, 3.10, (2022), pp. 7-30.

a constitutive component of warfare toward Greeks during the Classical period. In compliance with the readings proposed in previous pages, we are able to summarise some points. Due to the costs or other reasons, the Greeks did not always have horsemen, but they felt the need of this unit whenever the enemies owned a consistent cavalry. Horsemen, according to available sources, played a significant role on several occasions yet not unconditionally. Open grounds and other specific situations favoured the employment of horsemen and the Greeks, if provided, used them skilfully. Even communities who did not own a steading cavalry or a long-standing tradition concerning horsemanship knew how to take advantage of this unit. At any rate, the sources from the Athenian background agree with the following point: cavalry's function is clearly outlined in historical narratives each time horsemen affected, in some way or another, foot-soldiers, especially hoplites. Athenian sources always overstress slaughters of hoplites at the hands of horsemen. Even most recent scholarship could not negate that ancient historians become at once sensitive whenever horsemen's agency such as light infantry concerns hoplites and their fate. Following this line, we believe it is viable to put forward a possible suggestion regarding the cavalry's disappearance in some specific occasions. One can argue that the Greeks were interested in the outcomes of the battles, as a result, if cavalry was not resolutive, the sources simply gloss over. We believe that the question is less simple than one might expect. When cavalry was available, for instance, such at Mantineia, even significantly at Nemea and Cononea why, then, do horsemen vanish from the narrative leaving no trace?[56] For obvious reasons, this problem will remain pendent. However, it should not be overlooked that some cultural patterns permeated ancient sources. In other words, it is likely their perspective biased ancient historians and how they handled the battle narratives. In the eyes of the Greeks, warfare was the main contest to display manhood[57]. Yet mascu-

56 At Mantinea, in addition to the Athenian ones, the Spartans and their allies had horsemen on both wings (Thuk., V 67.1). As opposed to the through analysis of Thucydides for the sequence of events, Wojciech Duszyński, *The Phalanx Drift*, cit. p. 351: «although Thucydides is strangely silent about its role (scil. Spartan cavalry) in the battle». At Nemea, the Spartans had 600 horsemen and the opposite coalition even 1550 riders (Xen., *Hell*., IV 2.16-17), but no word is said on them. Again at Coronea, even though Xenophon stresses the importance of this clash for his times (Xen., *Hell*., IV 3.16) the opponents had quite the same horsemen but their role is unknown. On these two battles César Fornis, «MAXH XPATEIN en la Guerra de Corinto. Las batallas hopliticas de Nemea y Coronea (394 a.C.)», *Gladius*, 23, 2003, pp- 141-160.

57 Cf. Lin Foxhall, «Introduction», in Lin Foxhall – John Salmon (eds.), *When Men Were Men. Masculinity, power and identity in classical antiquity*, Routledge, London – New York, 1998, pp. 1-9; Paul A. Cartledge, «The *machismo* of the Athenian Empire – or the reign of the

linity, encapsulated in the concept of military valour, was exclusive to those who challenged enemies face to face standing motionless[58]. We do not revive the hackneyed hoplitic valour, yet to display manhood the most clear-cut chance was the fight on foot opposing the enemy. Needless to ovestress this point, but fighting as a hoplite with the annexed implications was under the social proof. It is not a chance that no general with his exemplary role for his soldiers has ever fought on horseback during the Classical period. In this regard, if we bear in mind how horsemen acted on the battlefield, throwing javelins from distance and the possibility of withdrawal was out of the real exhibition of manhood. Pragmatically their role was evident but permeated with ambiguity. After many expeditions where cavalry was employed with proficiency, according to Xenophon, at Leuktra, the richest Spartans contributed to the expensive horses which were mounted by people physically weak and did not care about their honour[59]. Even at Athens, the polis which, as we have seen, bolstered warhorses and annexed costs, there was some ambivalence regarding cavalry's perceptions[60]. It is not a coincident that, despite the chance of being an horsemen, an Athenian in a front of a jury of his fellow citizens boasted to have shared the risk fighting on foot during previous battles[61]. The importance of horsemen were under the eyes of all but some cultural patters endured even in front the evidence.

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phaulus?», in Lin Foxhall – John Salmon (eds.), *When Men Were Men. Masculinity, power and identity in classical antiquity*, Routledge, London – New York, 1998, p. 54; Karen Bassi, «The Semantics of Manliness in Ancient Greece», in Ralph M. Rosen – Ineke Sluiter (eds.), *Andreia. Studies in Manliness and Courage in Classical antiquity*, Brill, Leiden – Boston, 2003, pp. 25-58.

58 Among the various sources, pivotal is always the position of Laches in the homonym Platonian dialogue (Plat., *Laches* 190e4-6): Laches' definition represents the mainstream concept of military valour. On this point see Diego De Brasi, *L'immagine di Sparta nei dialoghi platonici. Il giudizio di un filosofo su una (presunta) polis modello*, Academia Verlag, Sankt Augustin, 2013, pp. 35-40.

59 Xen., *Hell*., VI 4.11. See briefly Scott M. Rusch, *Sparta at War. Strategy, Tactics, and Campaigns 550-362 BC*, Frontline Books, London, 2011, pp. 194-199.

60 Always important the reflections of Françoise Lissarrague, *L'Autre Guerrier. Archers, peltastes, cavaliers dans l'imagerie attique*. Editions la Découverte, Paris – Rome, 1990, pp. 191-231. For the disdain for cavalry see Jason Crowley, *The Psychology of the Athenian Hoplite. The Culture of Combat in Classical Athens*, Cambridge University Press, Cambridge, 2012, pp. 102-103.

61 The notorious case of Manthiteus in Lysias (Lys., 16.13). See Aggelos Kapellos, «In *Defence of Manthiteus*: structure, strategy and argumentation in Lysias 16», *Bulletin of the Institute of Classical Studies*, 57.2, (2014), pp. 22-46. On the "warrior ideology" see Joseph Roisman, *The Rhetoric of Manhood. Masculinity in the Attic Orators*, University of California Press, Berkeley – Los Angeles – London, 2005, pp. 106-109 with further bibliography.

Cavalry Transition
From Late Antiquity to the Middle Ages

Timothy G. Dawson

The periodisation of the past is a vexed matter in historiography. It is a matter of constant debate about when period transitions can be deemed to have happened, and what are the pivotal developments that drive and identify any perceived transition. In terms of military history one acknowledged primary distinguishing feature setting the "Middle Ages" apart from "Antiquity" is that cavalry overtook infantry as the more potent force on the Western battlefield. In the past it has been commonly accepted that the adoption of the stirrup was fundamental to that development, although even this idea has undergone serious challenge. The present author accepts that stirrups were the primary driver in the ascendancy of cavalry on battlefields, but this paper will argue that the reasons why the adoption of stirrups was transformative in that realm have been misunderstood, and that the real reasons are less complex, and less glamourous.

First it must be reaffirmed that the essence of cavalry is *movement*. A cavalryman stationary or only capable of limited movement in the active zone of a battlefield is soon to be a dead man. The presence of his horse in that situation in fact makes him somewhat *less* effective and *more* vulnerable than an infantryman equipped (armoured) to a similar degree. (This is the voice of experience speaking) What the cavalryman does with his mobility – archery, lance work, sword or mace play – is less significant than the fact of his mobility. This remained true even in the golden era of the "knight in shining armour".[1]

As just noted, the opinions espoused here are primarily based upon decades of practice in reconstructing ancient and medieval cavalry activities and equipment. They parallel the experiences of other riders, such as Richard Alvarez, who has also published his experiences.

Academically, the first scholar to come to prominence addressing the subject

1 Acknowledged by Morillo: Stephen Morillo, 'The "Age of Chivalry" revisited", in Donald J. Kagay; L. J. Andrew Villalon (eds.). *The Circle of War in the Middle Ages: Essays on Medieval Military and Naval History*, Woodbridge, Suffolk, UK, Boydell & Brewer, 1999, pp. 49.

Fig. 1 The author participating in "Battle of Legend" at Old Sarum (UK) 2014. The horns of the Roman saddle are hidden under the hem of the tunic, offering a practical illustration of why early Roman depiction of riders mounted rarely show them.

of stirrups was Lynn Townsend White in 1962.[2] White went so far as to propose that the evolving pre-eminence of cavalry transformed the entire society of Europe, creating the social structure known as Feudalism. White's extravagant social theory immediately came under challenge,[3] and has not stood the test of time well. We will not consider such grandiose ideas here, but rather look at what difference stirrups made in practice. White's characterisation of the supposed ineffectiveness of a cavalryman prior to stirrups in the first instance betrays his lack of practical experience, but that is hardly a surprise, nor should it be a trenchant criticism in the context of traditional scholarship of the time.

2 Lynn Townsend White, *Medieval Technology and Social Change* Galaxy Books, London, Oxford University Press 1962. Chapter 1: Stirrup, Mounted Shock Combat, Feudalism, and Chivalry.

3 Sawyer, P.H.; Hilton, R.H. (April 1963). "Technical Determinism: The Stirrup and the Plough". *Past & Present*. Oxford University Press. 24 (24): 90–100. doi:10.1093/past/24.1.90. JSTOR 649846.

Fig. 2 A scene from the Bern Prudentius *Carmina* ms (c.900 CE), showing typical spear use of Antiquity and the early Middle Ages – overhand (above) and underhand (bottom). Burgerbibliothek, Bern, Codex 264, p. 63.

More deserving is the cursory and limited survey of the Late Antique evidence. Evidence that would have shown him a wider and more effective array of techniques in use than he claimed.

Ancient cavalry

Cavalry certainly existed in Antiquity, and nowadays no one who has looked at the evidence can honestly suggest that their presence on battlefields was inconsequential. Since the time in which Lynn White wrote, Roman cavalry in particular has been the subject of a great deal of attention, both in terms of "pure" scholarship and practical reconstruction and experimentation. This has shown that, when properly constructed and suitably fitted to the rider, the Roman horned saddle is a secure seat which allows a moderately well-armoured man to perform the full range of aggressive actions and manoeuvres effectively and reliably at speed. (fig. 1) Most of Rome's enemies in Late Antiquity tended

to field infantry who were not well armoured but armed with spears.

Consequently, Roman cavalrymen commonly carried a substantial shield, avoided head on confrontations, and when coming into direct contact, used spears at arm's length, either underhand or overhand, in order to maximise their reach. (fig. 2) The effect of that method with the impetus of being mounted is ample for dealing with the sort of infantry, and indeed cavalry, that they normally confronted. In addition, the now-well-demonstrated security provided by a Roman horned saddle discounts the suggestion White quoted that enthusiastic sword use was likely to unhorse the rider.

In contrast, Rome's Eastern neighbours mobilised cavalrymen who wore much more comprehensive armour and sometimes rode fully armoured horses. Famous examples of the former are the Roxolani archers depicted on Trajan's Column, and of the latter is the complete scale horse armours and lamellar chest pieces retrieved from Dura Europos left behind at the time of the Persian siege of 254 CE.[4] Furthermore, the Eastern horned saddle had a subtly different design which was even more stable than the Roman form.[5] (fig. 3) That, combined with all that armour for both man and horse, allowed the Levantine cataphracts to dispense with a shield and use a larger lance in two hands affording more accuracy and force. Arguably, the two-handed spear technique could well be regarded as a form of "shock combat" distinct from that of the single-handed couched lance method that became so characteristic of medieval Europe. Thus, such cavalry had the capacity undertake something like the frontal shock attacks to which some have attributed the success of medieval chivalry. That being so, why did those men not dominate their fields of operation in the same manner as European knights?

Flavius Vegetius Renatus, who wrote the last surviving Roman military manual attributable to Late Antiquity around 400 CE, is unique in the amount of detail he gives on the training of the troops. On the cavalry there is an entire

4 For a discussion of the Dura Europos lamellar, see Timothy Dawson, *Armour Never Wearies: A History of Lamellar and Scale Armour in the West from the Bronze Age to the Nineteenth century*, The History Press, 2013, p. 71.

5 An article on this subject is presently in preparation. The distinct form is best illustrated in the great royal rock-cut reliefs, such as the investiture relief of Ardašir I, 224 CE–241 CE (https://www.livius.org/pictures/iran/naqs-e-rustam/naqs-e-rustam-relief-of-ardashir-i/naqs-e-rustam-investiture-relief-of-ardasir-i-2/ Accessed 28-02-2024) and the relief of Šapur I in triumph over Emperor Valerian, 260 CE–272 CE (https://www.livius.org/pictures/iran/naqs- e-rustam/naqs-e-rustam-relief-of-shapur-i/naqs-e-rustam-relief-of-shapur-i/ Accessed 28-02-2024), although there are numerous other examples, including other media.

Fig. 3 Iranian saddle. The author's reconstruction of a Levantine cataphract saddle based upon Arcsacid and Sassanian art.

chapter devoted exclusively to mounting horses, saying in part:

> Wooden horses were placed in the drill field in the Summer and under a roof in the Winter. First the recruits mounted these unarmed until they became proficient, then they were compelled to practice mounting while wearing their armour. There was very great concern that they learn to jump on and to leap off either from the left or the right side, even when they were holding an unsheathed sword or long spear.[6]

Having made a horned saddle, the present author made such a wooden stand to the most common height for a horse of the period – 14 hands / ~140 cm –

6 Flavius Vegetius Renatus, *Epitoma Rei Militaris*, Ed. & Tr. Leo F, Stelten, New York, Peter Lang, 1990, p. 37.

and set to trying that practice. Although a man of good health and moderately active, it took three months of half an hour's practice most days before a reliable mount was achieved *unencumbered*. Since there was no armour appropriate to the early Roman imperial era then available, that was as far as that experiment went at that point. It was, however, a convincing enough demonstration that Roman cavalrymen of the pre-stirrup era must have had a remarkably high level of fitness and athleticism even to get onto their horses, even before immersing themselves in the exertions of battle.

The greater amount of armour and the more enclosing structure of the saddle used by Levantine cataphract (fig. 3) would make that exercise significantly more difficult.

Approximately three centuries were to elapse until the drafting of the next surviving Roman military manual, the *Stratêgikon* attributed to Maurice. There is where we observe two developments. The cavalry being unmistakably treated as the superior component of the army and the first explicit mention of stirrups. The terminology of the latter is significant. The word used is *skala*[7], the ancient word for stairs.[8] This clearly signals that in the first instance, the Romans embraced this piece of equipment as a *mounting aid*. But did its presence then influence their riding style and perhaps other equipment? And did any similar changes accompany the dispersal of stirrups across Europe?

Obviously, in the absence of stirrups a rider must sit to every gait. Depictions of riders in action in distant Antiquity predominantly show them sitting with their legs quite straight and projecting forward.[9] (fig. 4) In later Antiquity, artists tended to prefer more animated pictures, so in Roman scenes, the riders legs are more frequently shown kicked back as in spurring the horse on. Otherwise they are shown slightly bent, with the thighs forward and the lower legs vertical or close to it. (fig. 6) That latter mode is typical in the Iranian scenes of Late Antiquity, with the additional detail of the feet shown pointed sharply downwards, a method that continued in use in the Caucasus into modern times. There can be no doubt that these methods are all representations of realistic

7 *Das Strategikon des Maurikios*, George T. Dennis (ed.) and Ernst Gamillscheg (tr.), Vienna, Österreichischen Akademie der Wissenschaften, 1981, pp. 80, 128, 340.

8 Liddle and Scott, *A Greek-English Lexicon*, Oxford, The Clarendon Press, seventh edition, 1890, p. 1392.

9 A few typical examples in chronological order: stone relief from Tell Halaf, Syria, c10th–9th century BCE, British Museum no. 117102; stone relief of a horseman engaging footsoldier, c4th century BCE, Museo Civico. Bologna, Italy; Pictish stone relief at Edderton, Ross-shire, Scotland, 7th–8th centuries CE (many others similarly).

Fig. 4: Stone relief of a warrior from Tel Halaf in Syira, c10th - 9th century BCE. British Museum, no. 117102

riding practice. Passing over the transitional period for the moment, once we have the copious illustrations of knights from the eleventh to fifteenth centuries we find that overwhelmingly the riders' leg positions are either the slightly bent form, or, even more commonly, thrust forward in the yet more antique manner. (fig. 5) In either mode, and especially the forward mode, the stirrups

provide some back-up lateral stabilisation for the rider, but no support for his weight, and so he is sitting to every gait, just as his pre-stirrup forebears did. This should not come as any surprise. Even at the beginning of the Age of Chivalry, the full equipment of an eleventh-century knight as depicted, for example, on the Bayeaux Textile, (knee length mail shirt, helm, shield, sword and spear) weighed in the vicinity of 26-30 kilogrammes, not to mention the general physical encumbrance. Later, the armour could weigh as much as 40 kg. Trying to ride in a modern fashion, with shorter stirrup leathers and rising to a trot, is not impossible with such encumbrance, but rapidly exhausting, and hard on the knees. Hence, the preferred practice of the time was to avoid trotting at all if possible,[10] and otherwise a settled seat rocking from the hips (in a smooth trot, at least) makes bearing the weight of the panoply much less onerous.

In the transitional period, there is a pertinent mystery in addition to precisely tracing the paths and timings of the diffusion of stirrups themselves. That mystery is changes in the structure of the saddle. Did the built up forms of the horned saddle simply vanish with the appearance of stirrups? There is a strange contradiction in the fact that across the full geographical span from Iran to Britain. Such art as has endured from the seventh to the ninth centuries is quite consistent in showing saddles with no substantial superstructure, and yet still with no stirrups. European examples come from areas where the Roman horned saddle must have been known.[11] It is certainly true that any saddle is better than none, but given the demonstrable effectiveness of the horned saddle in the military context, would it not have been adopted? And if adopted, why would it have been abandoned without good reason? Even today, the usefulness

10 The Rule of the Teutonic Order of knights specifies trotting by the hour in armour as one of the primary *field punishments* for transgressions by its members: John Ellis, *Cavalry: The History of Mounted Warfare*, Barnsley, Pen & Sword Military Classics, (1978) 2004 p. 72; Miklós Jankovich, *They Rode Into Europe: The Fruitful Exchange in the Arts of Horsemanship Between East and West*, London, Harrap, 1971 p. 74. Travelling at the trot is presented as an ordeal even for civilians in medieval poetry: Leslie C. Brook, 'Rewards and punishments in the De Amore and kindred texts', *Reading Medieval Studies, XXV*, (1999) p. 6. Horses can be trained to refrain from trotting at all. The present author was fortunate enough to own one who had been so trained and would transition smoothly from stationary or walk directly to a collected canter – it was indeed a great boon to an armoured man.

11 The most lavish and accessible (entirely digitised on line) example is the *Stuttgart Psalter* (Württembergische Landesbibliothek Stuttgart, Cod.bibl.fol.23) of the first half of the ninth century and believed to have been painted at Saint-Germain-des-Prés (Paris), another similarly available is the Bern Prudentius ms of c.900 (Bern Burgerbibliothek, Codex 264 (https://www.e-codices.unifr.ch/en/bbb/0264) made at St Gall.

Fig. 5. Richard I is captured as he rides toward England, showing the classic ancient and medieval extended leg position. Peter of Eboli, *Liber ad honorem Augusti*, Burgerbibliothek, Bern, Codex 120.II, f. 129r.

of built up pommel structures is reflected in various saddle designs, such as the Australian stock saddle. Arriving at the tenth century, there is example of the *Leiden Maccabees* manuscript which is dated to the first half of the century which shows saddles with substantial pommel and cantle structures, and yet still no stirrups, except where some later hand has added them sporadically.[12]

The situation in Iranian art is even more striking. Earlier art clearly shows horned saddles.[13] By the end of the sixth century the horns had disappeared from the pictures leaving saddles with such low arches that they are often not to be seen at all, and yet stirrups had not visibly taken their place.[14] In that

12 Leiden University Library, ms Perizoni F 17.

13 See note 5 above.

14 The practice of carving large rock reliefs had largely disappeared by the fourth century, the exception being the grotto of Khosroes II at Taq-e Bostan, 590 CE–628 CE, which shows magnificent detail of the equipment of both man and mount. (https://www.livius.org/pictures/iran/taq-e-bostan/taq-e-bostan-large-cave-lower-relief/ Accessed 28-02-2024) More gene-

cultural context, a simple explanation comes readily to mind. The men depicted in such art are rulers. Equestrian prowess was central to their status. Hence, the acknowledgement that they might stoop to employing such a mundane assistance as stirrups would be avoided. Was the same artistic-ideological dynamic influencing Western art also in this transitional period?

Through the tenth century the utility to a well built up saddle re-asserted itself. In terms of pictorial evidence, the earliest surviving instance to come to the view of the present author is a single scene in the Bern Prudentius manuscript of c.900 CE, (fig. 6) which shows a saddle with a higher structure, particularly with a pommel substantially higher than the cantle, a feature which can be seen across many different types of saddle across the centuries ever since.

By the eleventh century, the primacy of cavalry was becoming firmly entrenched. And yet from sources like the Bayeaux Textile we see that while the use of stirrups and saddles with high pommels and cantles are ubiquitous, the warriors are still more likely to be throwing their spears or thrusting overhand or underhand than they are to be couching them. Again, this evidence undermines the suggested connection between stirrups and saddles and couch lance shock tactics.

> Another practitioner, Richard Alvarez, has, in proper Quixotic fashion, charged the entire stirrup-and-saddle doctrine head on. Writing on the basis having also tried many of the techniques in robust practice, Alvarez dismisses the entire dogma. He asserts that neither stirrups, nor a built up saddle, nor, indeed, any saddle at all, are necessary to the couched lance shock tactic, let alone any other mode of combat. They are both very helpful to a rider in that, he admits, and many other ways, certainly, but not essential.[15]

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rally, repousée silver plates have taken over as the most common medium for royal equestrian scenes, and offer much finer detail than all but the best preserved carvings. One may contrast the third-century plate in the Amsterdam Hermitage Museum which shows a pommel horn very clearly with all those that come after, such as British Museum no. 124092 (rather vaguely dated 5th–7th centuries. https://www.britishmuseum.org/collection/search?museum_number=124092 Accessed 28-02-2024), although there are plenty of examples scattered through collections across the northern hemisphere.

15 Richard Alvarez, 'Saddle, Lance and Stirrup: An Examination of the Mechanics of Shock Combat and the Development of Shock Tactics', originally published on line on Alvarez' website (now defunct). Reproduced at https://www.seanpoage.com/stirrup-less-charges-shocking/ Accessed 2023-08-20. 'Stirrup-less charges? Shocking! Part 2 of "Saddle, Lance and Stirrup":The Irish/Roman Connection', originally published on line on Alvarez' website (now defunct). Reproduced at https://www.seanpoage.com/stirrup-less-charges-shocking/2/ Accessed 2023-08-20.

Fig. 6. An unique image from the Bern Prudentius *Carmina* ms (c.900 CE), showing a saddle with higher than usual pommel and cantle. Burgerbibliothek, Bern, Codex 264, p. 86.

In conclusion, the weight of all this evidence, whether historical or practical, is that while the advent of stirrups *was* essential to the establishment of the ascendancy of cavalry on battlefields in the Western half of Eurasia across the tenth to fifteenth centuries, the reasons are not those proposed by past academic scholarship. Stirrups did not allow the use of techniques that were not possible otherwise, nor did they allow warriors to wear more armour than some had done hitherto. The real reason for the ascendancy of cavalry that stirrups facilitated was simply an increase in the *quantity* that could be put onto the field. That increased quantity resulted from the prosaic fact that with stirrups as a mounting aid and as a back up stabilisation, the men riding did not have to be as physically robust and athletically fit, and did not have to be as accomplished as riders, compared to their pre-stirrup forebears.

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Cavalry through the Longue Durée

Stephen Morillo

Introduction

"Horses are just men extenders." — Ken, in the "Barbie" movie

Horses had already achieved mythical status at the foundations of European literature. The story of the Trojan Horse, the ruse concocted by Odysseus that ended the Trojan War, is mentioned in *The Odyssey,* in a number of other early classical sources, and appears in full in Virgil's *Aeneid.* Whatever the actual historicity of the war, the centrality of horses to the chariot-based warfare of the Achaean Greeks and their Trojan enemies (for whom the sacredness of horses was crucial to Odysseus' ruse) is well established as fact, and the myths simply attest to the power that the image of the horse had already achieved around 1200 BCE for war-eager humans.

A bit more than 3000 years later, tanks were on the threshold of supplanting horses as the iconic symbol of mobile land warfare. But reality lagged behind the image. The blitzkrieg machine that was the German Wehrmacht in 1939 was perhaps 10% motorized, relying on horses to draw artillery and the supply wagons that its infantry divisions depended on. The number of cavalry units in the German Army actually increased across the course of World War II, and Germany and the USSR together used over six million horses during the war.[1] Indeed, even the old equine image was hard to transform fully. Between the dawn of equine warfare and the dawn of the atomic age, horses were, in fact and in the human imagination, central to armed violence.

The use of horses in war established indelible images of how humans could employ other animals and later even machines in their struggles against each other. Riding a beast that served partly as weapons platform, partly as weapon in itself, and partly as companion with a personality of its own — often famously individual, as in Bucephalus, Alexander's steed after whom a city was named — became the model, across many cultures, of how humans obtained military

1 For a decent overview, see https://en.wikipedia.org/wiki/Horses_in_World_War_II .

assistance from non-humans, animal or machine. The results show up in fantasy imaginings of dragon riders, armored rhinoceroses at the comic book vision of Thermopylae, or giant robotic combat mechs; and in reality, where the naming of individual aircraft by their crews clearly follows this pattern, following a long tradition of named ships (the Achaean Greeks called ships "horses of the sea"); failure to fit this paradigm well enough hampered both the real and the imagined uses of other alternatives, including elephants, who could not match horses' partnership with humans (though anthropomorphized projection is undoubtedly a large part of the human perception of a warhorse's loyalty and bravery). In the other direction, conceptualization of fighter aircraft along the lines established by equine warfare may have slowed the adoption of unmanned aircraft even while it enhanced the heroic image of fighter pilots.

This article surveys the material and practical background to the cultural analysis sketched above, providing a longue durée overview of the place of horses and equine warfare in the history of human armed conflict. While examining the origins of the human-horse partnership, the development of the different ways horses have been employed in war, and the patterns that emerged as horses influenced military activity and the social structures and political organizations that supported warfare, it will argue that the addition of horses to the human military arsenal constituted the most important transformation of warfare from its origins until the vast suite of technological changes that accompanied the industrial revolution began to make horses obsolete as a military technology.

Energy Foundations

The foundational perspective for understanding the impact of horses on warfare is physics, specifically the energy sources available for getting military "work" done. Before the advent of the various industrially generated power sources since the early nineteenth century, starting with steam engines, the sources of power available for conducting warfare were basically three: wind, water, and muscle. The first two remained extremely limited in military application, except for wind-driven ships that could be made into weapons platforms, because the power they generated could not be applied in short and powerful enough bursts to do either the constructive or destructive work of armed conflict. The chemical source of power supplied by gunpowder added to the human energy arsenal, being incorporated gradually and with slowly increasing efficacy over the course of seven or eight centuries before being multiplied by industrial inventions.

Heroic equine imagery: Frank Frazetta, "The Berserker", painting used as a cover illustration for Robert E. Howard's Conan the Conqueror. (Wikimedia Commons)

Thus, for most of military history, muscle power was the prime mover, so to speak. Whether the task was moving armies, moving the supplies that armies lived on, building the infrastructure, buildings, and fortifications armies occupied and fought in (and fortifications gave an inherent advantage to defenders because construction could accumulate labor energy over time, whereas destruction had to take place more quickly to be effective), or dealing damage with weapons, muscles did the job.[2]

Horses are, of course, large, muscular animals that can generate significant muscular power — it is no coincidence that the output of internal combustion engines in automobiles continues to be measured in units of horsepower. Thus, when humans added the power of horses to their war-making arsenal, the addition constituted a massive increase in the ability of armies to accomplish their energy-powered goals. Initially, horses carried supplies on their backs or hauled wagons, extending the range and speed of supply lines, though within limits. An army entirely dependent on carried supplies could only operate out to a three or four days range from their supply source before the embodied muscles doing the hauling ate up all of what they carried. Pack horses or horses hauling wagons could carry far heavier loads than human porters could, but also ate proportionately more. The three to four day limit still held, but horses could walk faster and therefore farther in a day than humans, extending the logistical chain.

The same speed advantage that horses possess over humans on foot meant that cavalry forces could move more quickly, at the tactical or the strategic level, than infantry forces. The strategic level included the vastly increased the ability of a mounted force to inflict damage on enemy territory on campaign, as increasing the radius of operation of an army multiplies the area of damage significantly.[3]

When wagons became chariots (discussed further below) horsepower enabled a new form of weapons platform. When human riders mounted horses, the horses themselves became both weapons platform and potential weapons, ones that generated increased force by multiplying their weight by the speeds they could reach, though as weapons horses have a limitation similar to humans': they retain an instinct for self-preservation and so can't be used simply to bash into solid objects like walls or pseudo-solid objects like a block of foot soldiers,

2 See Morillo, *War and Conflict in the Middle Ages: A Global Perspective,* (Polity Press, 2022), Ch. 4, for a more detailed analysis of energy in pre-industrial warfare.

3 See Clifford J. Rogers, "Cavalry in Medieval Warfare," *Journal of Military History* (forthcoming), on the geometry of plundering.

especially if the foot soldiers presented a pointy surface like a wall of pikes.

In short, horse muscle was a revolutionary enhancement of the ability of militaries to do military work, probably a greater enhancement than any other innovation before the industrial revolution's powered processes and machinery spread over the globe. The milestones and varied effects of the development of military horsepower further illuminate this conclusion.

Domestication

The first step in adding military horsepower was the domestication of horses. The cultural impact of the partnership between *Homo sapiens* and *Equus ferus caballus* is visible even in the history of how the evolution of the two species has been viewed. Since early in the history of evolutionary theory, both were seen as paradigmatic examples of how evolution "progressed" from more primitive to more developed, "perfected" forms. This view is captured in the once-standard image of "the ascent of man" in a line up from chimpanzees through early human ancestors to modern humans, each step (always seen as male) getting more upright, larger headed, etc. A very similar line up image connected Eohippus ("the dawn horse") through various intermediate forms to the modern horse, each step getting larger, longer-legged, and more suitable for carrying modern humans into battle.

This "ladder" metaphor of evolutionary change has been replaced by models that are much bushier and non-teleological for all creatures. What turns out, oddly and ironically, to unite humans and horses is that both are somewhat alone at ends of a piece of the evolutionary bush, with no close cousins. Humans separated from their closest living relatives about as long ago as horses separated from theirs. In other words, asses, zebras and slightly more distant and surprising horse relatives such as tapirs and rhinoceroses are the "great apes" of the horse world (an analogy that obviously privileges the human usefulness of horses as their central characteristic, as except for asses none of horses' various relatives are domesticated or even domesticable.) Both humans and horses are examples of lines of evolutionary descent that proved relatively unfruitful in terms of number of species!

Humans evolved in the grasslands of Africa and horses evolved in the prairies of the Americas. They met because both proved capable of migration. Humans emerged out of Africa into southwest Asia, Europe, and steadily beyond. We crossed over into the Americas during the last Ice Age, probably by a combination of coastal navigation and walking across the Bering land bridge uncovered

by the glacial maximum. Horses crossed the same land bridge in the opposite direction. In another irony, all of the American instantiations of early equids went extinct after humans arrived in their continents, almost certainly a victim of the hunting prowess of these modern humans for which the horses were unprepared. (Other American megafauna went extinct at the same time; the same megafauna extinction had happened thousands of years earlier in Australia when humans got there). But horses took root and thrived in the vast Asian steppes. It was on these grasslands that the human-horse partnership formed.

Specifically, humans around the margins of the steppes had been hunting game and experimenting with domesticating and keeping animals such as goats and cattle for meat and hides, and the wild horses of the area were initially just another target for human hunting. Thus, the earliest domestications of horses were undoubtedly as food animals. Horses, native to temperate grasslands, had the advantage over cattle that in winter, they would dig through snow cover to get at the grasses underneath. Cattle did not, and had to be fed or slaughtered over the winter.

The evidence for this sort of domestication is difficult to spot archaeologically as it leaves little or no evidence in the skeletons of horses bred and kept for food, leaving the exact date of its origin unclear. It had probably happened by about 4000 BCE at a number of places across Central Asia. At some point in the middle of the following 1000 years, human communities just north of the Black Sea in the Volga-Don region of the Pontic steppe succeeded in domesticating horses as work animals. The key breakthrough, evidenced by the horse genome, was finding breeding stallions that were unusually docile and thus easier to tame and manage than their wild cousins, and in addition that had stronger backs than usual. This combination of temperament and strength would have made for animals easier to use for hauling loads or riding. The Y-chromosome evidence from the modern domesticated horse genome indicates that this particular domestication happened only once and was critical, for all modern domestic horses descend from not more than a handful of stallions. (The female side of the genome is much more varied, as wild mares could be incorporated easily into a domestic stallion's herd.)[4]

4 Achilli, Alessandro; Olivieri, Anna; Soares, Pedro; Lancioni, Hovirag; Kashani, Baharak Hooshiar; et al. (14 February 2012). "Mitochondrial genomes from modern horses reveal the major haplogroups that underwent domestication". *Proceedings of the National Academy of Sciences*. 109 (7): 2449–2454; Gibbons, Ann. "Ancient horse DNA reveals the long-sought homeland of modern horses". *Science* 374, 20 Oct 2021.

The other early evidence for this kind of domestication is in horse skeletons, specifically in their teeth. Horses that were ridden generally were bitted for rider control. Bits leave characteristic wear patterns on the horse's teeth, and this kind of wear shows up earliest and most clearly in the archaeology of the Pontic steppe communities where horses were first domesticated. The success of this domestication event also shows up in neon letters in subsequent history. The history written in the domestic horse genome shows a rapid expansion of the breed from its area of origin eastward into the steppes, southward into southwest Asia, and westward into Europe. This expansion of the domestic horse population corresponds to the cultural spread of the languages of the people who domesticated the horse, the Proto-Indo-European (PIE) speakers whose language descendants are today the most widespread in the world. Horsepower had begun to drive history.[5]

The impact of the domestication of horses was made possible and multiplied by technology. Bits, reins, and riding pads which evolved into saddles assisted in turning horses into vehicles; stirrups came later, a topic we will return to shortly. Riding turned humans into super-herders, able to guide and control far larger herds of other domesticated grazers than people on foot could (while dogs continued to play a helping role), potentially opening up much more grazing land for exploitation. What really opened up the Central Asian steppes to human habitation, however, was the combination of horse riding with the use of horse-drawn wagons, which represented the dynamic fusion of cultural traditions. The people on the edge of the steppes who domesticated horses lived in close enough proximity to the newly developing sedentary, agricultural-urban societies of the Fertile Crescent that they could adopt wheeled vehicles (primarily oxen-drawn wagons), the sedentary societies' invention. The horse users made changes in collar design that let horses haul wagons more efficiently. Wagons let entire communities become mobile, as tents, cookware, and all their other (limited) possessions could be packed on the wagons. The steppes opened up to an entirely new lifestyle.

In a process clearly focused on military use, horse-drawn wagons evolved towards lighter vehicles on two wheels that could be pulled much faster than a wagon: horse-drawn chariots. The reason chariots emerged as a military technology before true cavalry, even among the steppe societies where riding had been practiced for perhaps a millennium before chariots appear in the archaeological

5 See Anthony, David W. *The horse, the wheel and language: how Bronze-Age riders from the Eurasian steppes shaped the modern world*. Princeton University Press, 2010.

record around 2000 BCE and especially among the steppe-adjacent sedentary societies that had already invented warfare based on massed infantry armies, is that the chariot did not require the specialized skill of riding on horseback while wielding a weapon (a development slowly made easier as better saddle designs and eventually the stirrup made armed riding easier). Instead, in a neat Smithian division of labor, the chariot carried two to four men. The first was a driver who focused on controlling the team of two to four horses and steering the chariot; the others were the truly military men, who rode beside or behind the driver and could shoot arrows or wield javelins, spears, axes, clubs, or swords. They could do this from the chariot or rapidly dismount, fight on foot, and if necessary remount for a quick getaway.

Even with the tasks so divided, driving or fighting from a chariot was a skilled task, and the chariot itself represented a significant investment in resources. Thus, charioteers formed a military-social elite who dominated the societies where war chariots spread, from the southwest Asian powers — the Hittite kingdom, Egypt, Assyria — to Vedic India and Shang China. Chariots became the military arbiters of the Bronze Age. But they were limited. Though heavier chariots, sometimes with scythed wheels, could sometimes break an infantry formation, they were best at hit-and-run tactics, and their success against Bronze Age infantry reflected the weakness of that infantry as much as the inherent strength of chariots. They could operate effectively only on clear open ground, and even open fields often had to be smoothed for them. Although the use of war chariots continued into the Classical era and could be found in the fringes of Celtic Europe as late as 500 CE, the heyday of chariots came to an end with the end of the Bronze Age empires around 1200 BCE. Among the many causes of their decline, two military developments were central. First, smaller communities around the edges of the great chariot empires, often originating in rougher, mountainous regions, developed better infantry forces than the great Bronze Age empires had ever been able to raise. These proved capable of facing down chariot forces and winning battles against them. Second, the spread of true cavalry techniques — men wielding weapons effectively from horseback — made chariots obsolete.[6]

True cavalry was faster, maneuverable over a wider range of terrain, and more tactically flexible and strategically mobile than chariots. In addition, more cavalry could be raised and deployed than chariots, broadening the potential social base from which cavalry forces could be drawn. The class of men who

6 Robert Drews, *The End of the Bronze Age: Changes in Warfare and the Catastrophe Ca. 1200 B.C.E.,* Princeton University Press, 1993.

owned horses still almost always formed a social elite. But whereas the Bronze Age chariot empires were centralized, palace-based polities, reflecting the very limited number of charioteers, the age of true cavalry often saw much larger warrior elite classes that could counterbalance the power of the central ruler; indeed, most rulers could not dictate to but rather depended on the support of their warrior elites. The military use of horsepower, in other words, now shaped the social structure of almost all agrarian-era polities where horses existed (see below).

The emergence of true cavalry formed one piece of what might be called the "modern" foundation of state-based military power: the combination of true cavalry with effective infantry forces (ones whose states could draw on communally coherent infantry forces such as those that emerged at the end of the Bronze Age or that could create the coherence infantry needs through drilling conscripted masses) and siege trains, all created and supplied by a central state's bureaucratic machine. This combined arms military-administrative complex appeared first in the Neo-Assyrian Empire (919-609 BCE) and independently at the other end of Eurasia in the Chinese Qin Dynasty (221-206 BCE) and has dominated state-level political organization ever since, in both agrarian and industrial forms. Again, the cavalry component of this complex was critical, both militarily and socially: the efforts of the Qin to grind the Chinese chariot- and cavalry-based warrior aristocracy out of existence, or at least to subordinate it firmly to centralized state power, attest to the importance of the influence of horsepower in political and social history.

Horse Worlds

The use of cavalry spread steadily from its land of origin in the southwest corner of the Asian steppes. Within 1500 years, the interaction of the horse-human combination with the various environments it spread to had produced three types of worlds depending on whether and how many horses could be supported.[7]

Fully horsed societies

The successors of the Proto-Indo-European speakers who first domesticated horses, as well as the peoples they influenced or who adopted their "invention", came to dominate the largest and most important "horsed world", the central

7 See Morillo, *War and Conflict,* Ch. 3, for the following section.

Asian steppes. This vast area of grasslands stretched from northwest of China westward to the region north of the Black Sea where the PIE speakers originally lived, with a small extension into the plain surrounded by the Carpathian mountains that would become Hungary when the Magyars, horse-riding nomads from the greater steppes, occupied it in the ninth century. Lacking enough rainfall to support grain-growing agriculture, the steppes could nonetheless support vast heard of grazing animals, including horses, such that the peoples who exploited this environment became fully "horsed societies". That is, everyone, men, women, and children, rode horses, and possessed horses enough that everyone had multiple mounts. Cities were non-existent, as steppe peoples followed their herds from summer grazing grounds in the cooler highlands to winter grounds in the valleys: steppe people lived in tents, wagons, and on horseback. Thus, steppe nomadic societies were highly and thoroughly mobile, as were the possessions that mattered to them: animals and what could be packed in their wagons. "Possession" of land was not a "thing" to nomadic societies. If forced from favored or traditional grazing lands by another group, the whole society could simply migrate to fields that were, if not greener, at least less contested, though joining the superior force's coalition was always an option.

Several consequences follow that had long-term military significance. First, horsed societies were, if united, potential military juggernauts, as their vast equine herds gave them unmatched mobility that they combined with devastating firepower; fundamentally, they could deploy far more horsepower than anyone else. The Mongols stood at the apex of this line of development. As herders, they saw masses of sedentary infantry as just another herd to be split, maneuvered, harassed and ultimately mastered. But living in smaller, mobile groups meant that they were not "naturally" united: political fragmentation and rivalry was the base condition of the steppes as a whole; building larger steppe-based political coalitions required the expenditure of some sort of energy (political-military and/or economic) to counteract the tendency to political entropy created by mobility. Steppe political culture was equally fluid: "tribal" or ethnic identities on the steppes often shifted with political shifts. Finally, the political-military reach of horsed societies was geographically limited. That is, steppe armies could not campaign for long outside the steppes, as no place else had enough fodder to support the numerous herds on which their military might depended. A nomadic coalition might conquer a significant sedentary society, but at least some of the conquerors could not remain steppe nomads if they wished to settle in a capital city and rule their conquest. Thus, nomadic rule of sedentary areas tended to be short-lived (while sedentary conquest and rule of nomadic

areas was normally impossible, as grain-based armies could not penetrate the steppes logistically). Eventually, by the seventeenth century, the massive advantage in horsepower that steppe societies held had eroded in the face of a steadily increasing demographic deficit (in other words, farming societies deployed ever more human muscle), the ability of farming societies to accumulate that labor energy in fortifications penning in steppe armies, and the growing addition of the chemical power of gunpowder weapons to the sedentary power store.

Partially horsed societies and horsed elites

Horses could, of course, be raised and maintained outside the steppes, though in far lower numbers than the steppes could support. Their military utility meant that horses were raised wherever possible. But outside the steppes they were more expensive and rare and thus their ownership was dominated (as rare expensive things that displayed their owners' superior status always were) by socially powerful elites. Ownership of horses and mastery of the skills of mounted combat then simply reinforced the political and social superiority of what became (or continued to be) warrior elites. European knights, Japanese samurai, the warrior elites of Tang China who were often closely related to actual steppe families, and the best units of the Byzantine army all conformed to this pattern and constituted the military elite of their respective societies, a pattern that held until the industrial revolution.

The cavalry of partially horsed worlds thus differed from steppe cavalry in being more socially exclusive and militarily differentiated. Although there were certainly status distinctions within steppe society that corresponded for the most part with differences in equipment and perhaps combat role, these were distinctions that held within a "cavalry" type. That is, lower-status steppe warriors might have fewer horses and less armor than higher-status ones, but they still had horses. Elite horse warriors were often the exclusive possessors of horses, at least ones suitable for combat, in their societies, which synergized with the elites' ability to afford better armor to distinguish them not just socially but in terms of military function from non-cavalry members of armies, that is infantry and engineers. This had important implications for the role of armed force in the dynamics of internal social and political conflict.

The other common difference that emerged between horsed world cavalry and horsed elite cavalry was that, with horse breeding confined to specialized stud farms and with elite warriors usually acquiring the best (heaviest) armor and equipment they could, the horses of warrior elite cavalry tended to be bred

for greater size and strength than steppe horses, which remained closer to the smaller size of wild horses. (The common name "steppe ponies" exaggerates this somewhat, but not hugely.) This was not universally true —Japanese horses were smaller and weaker than many sedentary breeds, for example. But it was certainly the common trend.

Larger horses sacrificed some endurance for their greater strength. This difference then corresponded with and reinforced the tendency for sedentary cavalry to be used more in a "shock combat" (hand-to-hand, melee based) role, as literally "heavy cavalry", than in the mobility-and-firepower role that most steppe cavalry filled.

Nor were all partially horsed worlds created equal. Some warm dry regions bred excellent horses in limited numbers — Arabia and Spain were home to good breeds, both of which influenced the varied breeds of wetter and cooler western Europe. Subtropical India had real problems maintaining good horses, which accounted for the vulnerability of India to conquest by places with more and better horses (especially the steppes) through the northwestern entrance to the subcontinent via the Islamic world.

Horseless worlds

Finally, there were regions of the world where there were no horses. Given the military importance of cavalry, this might have made these areas highly vulnerable to conquest and domination by societies with horses. But in fact they were so isolated from the worlds with horses that this didn't matter for most of history.

The Americas were where horses evolved, but they became extinct there about 12,000 to 10,000 years ago, as we noted above. The lack of horsepower in the Americas accounts in large part for the limited tactical, strategic and logistical range of even peak Pre-Columbian American militaries such as the Aztecs and Incas. But the horses that made it to Asia to be domesticated by humans there were reintroduced to the Americas by the Spanish conquistadors, who indeed counted horses as one of their military advantages over American peoples such as the Aztecs. But horse populations rapidly spread beyond Spanish control to again influence American warfare at least into the 19th century.

Neither Australia and New Zealand Oceania, unsurprisingly, ever supported native horses. There are today a few wild horses, descended as in the Americas from European imports, in Australia, but horses are militarily irrelevant in the history of these regions.

Finally, Africa south of the Sahara desert was a mostly horseless world that periodically was forced into the partially horsed category by trade across the Sahara from the Mediterranean coast. While kingdoms such as Mali and Songhai, in the Sahel, the grassland region south of the Sahara, briefly developed effective cavalry forces, these proved difficult to sustain. This is because African Sleeping Sickness and African Horse Disease, both carried by insects, are widespread south of the Sahara and are fatal to horses. Thus, Sub-Saharan Africa remained for the most part a horseless world.

Developments, Patterns, Milestones

The spread of horses globally resulted mostly in the gradual expansion of partially horsed worlds in the Americas; only the Great Plains of North America saw a late and relatively brief appearance of a new fully horsed world. With the establishment in most places by 500 AD of the ecological variety of horsed worlds just outlined, the use of horses in warfare settled into fairly stable patterns until the spread of the industrial revolution.

State Power and Infantry vs Cavalry Use

One of these patterns was true back into antiquity but became more visible when the climate catastrophe of the Late Antique Little Ice Age (LALIA) brought an end to the classical world.[8] The resulting fragmentation of the classical world that created the Middle Ages meant that political power was more varied and fragmented than it had been under the great classical empires. In other words, for many centuries after the break up of the great Classical empires across Eurasia, the political world consisted predominantly of relatively weak and weakly centralized states. How does this relate to horses and cavalry?

The answer has more to do with infantry and the bases of its combat effectiveness than directly with cavalry. Infantry effectiveness is very closely tied to the cohesion that a body of infantry can maintain. There are basically two sources of infantry cohesion. First, the body of infantry drawn from an already cohesive social-cultural setting imports its social-cultural cohesion into its military role. An early instance of this already noted above were the infantry forces, drawn from small, coherent communities on the edges of the Bronze Age em-

8 See Morillo, *War and Conflict,* Chap. 2, for an analysis of "medieval" periodization globally in terms of climate and demography, including the impact of the LALIA.

pires, infantry forces that helped bring chariot warfare and those same empires to an end. The classic example is Greek phalanxes composed of the neighbors and citizens of a *polis*. Urban settings continued to be the breeding ground of potentially effective infantry, especially in the European Middle Ages — with Flemish and Italian city-states leading this trend, for example, as well as the Swiss. Second, a state can bring together a group of men, even if randomly selected, and train (drill) them as a group until they achieve cohesion. This, however, requires the state to have fairly substantial economic and administrative resources. Originated, as noted above, in the Assyrian and Qin polities, the classical model here is Rome and its legions; the same model accounts for the vast infantry forces of a succession of Chinese dynasties. In the fragmented medieval world, both sources of good infantry became much scarcer than they had been in the classical world. Sources of socially cohesive infantry, usually cities, declined mostly because the decline of networked economic activity created by climate and disease crises affected urban settings most severely. Drill based cohesion declined because few medieval states could muster the resources necessary to maintain drilled standing armies.

Cavalry, by contrast, depends less on cohesion for its effectiveness than does infantry, and benefited in the medieval setting either from a lifestyle foundation of its effectiveness (as in the steppe nomadic peoples) or a foundation built from socio-economic exclusivity and advantage (warrior elites). Thus, the global Middle Ages saw an age in which cavalry forces assumed greater importance vis a vis infantry forces than they had had in the classical era or would have again in a post-medieval world of greater economic activity and revived state power. Military historians have sometimes called the European Middle Ages an "Age of Cavalry". It was, but because it was, fundamentally, an "Age of Bad Infantry".[9] Similar patterns can be seen in other regions: the eclipse of samurai cavalry forces in Japan in the later 1400s by massed bodies of infantry tracked the rise of post-Onin War Daimyo Domains as more effective taxing-and-administering polities, even on a small scale.[10] And seen from the other direction, the powerful horsed aristocracies that were the basis for many cavalry forces in partially horsed worlds were inherently in a tense and often oppositional stance vis a vis strongly centralizing states. The effort by Chinese Warring States polities, led

9 For a more detailed examination of this question focused on Europe, see Morillo, "The 'Age of Cavalry' Revisited", in D. Kagay, ed., *The Circle of War.* (Boydell and Brewer, 1999).

10 Morillo, "Guns and Government: A Comparative Study of Europe and Japan", *Journal of World History* 6 (1995), 75-106.

most successfully by the eventual unifiers of China, the Qin, to grind their own warrior aristocracies out of existence stands as a paradigmatic case here.

Cavalry forces could to some extent, of course, be established on the "recruit and train" model of infantry, as the cavalry forces of the *ancien regime* in Europe show, though the aristocratic (or at least gentlemanly) foundation of a horse-riding elite lurked not far below the surface in almost all such cavalry. But where the recovery of central state authority advanced, as in many European states after 1500, effective infantry reappeared on this basis and joined with cavalry and newly created gunpowder artillery in a new variation on the Assyrian-Qin combined arms armies.

Gunpowder and Cavalry

The emergence of gunpowder weapons, while perhaps not as revolutionary as many historians have claimed,[11] certainly had an effect on the role of cavalry in warfare. This constitutes the second large pattern we can outline, and ties to the first in that gunpowder was the second addition, after horsepower, to the sources of energy available to do the destructive work of warfare. Indeed, they were in many ways complementary. One of the things that horsepower did little to advance in war making was the taking of fortifications, Anna Komnena's famous observation about Frankish (western European) cavalry charges — that they would bore through the walls of Babylon — notwithstanding. Gunpowder artillery proved a significant advance over traditionally powered artillery for taking down fortified walls, within the limits of terrain and in an ongoing arms race with fortification design. But in order to be brought to bear against their targets, gunpowder cannon had to be moved into place, and given the weight of cannon, until motorization horses remained essential to this task, a reminder of the greater weight of horsepower versus gunpowder as additions to military power sources.[12]

The relative immobility of gunpowder artillery before motorization also con-

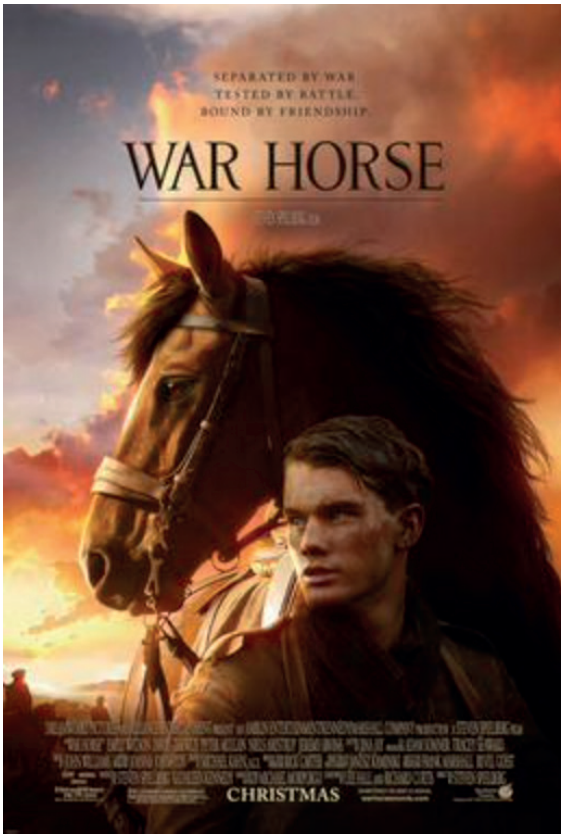
11 A full consideration of the many questions, spread across a vast bibliography, related to the "Military Revolution of Early Modern Europe" and the impact of gunpowder weaponry is beyond the scope of this article. For an introduction, see Jeremy Black (ed.), *Global Military Transformations: Change and Continuity, 1450-1800*, Collana Fvcina di Marte, No. 12, Roma, Società Italiana di Storia Militare–Nadir Media, 2023, esp. Morillo, "The Medieval Background: Medieval Military Revolutions", pp. 15-30.

12 Another measure of this comparison, perhaps, is that no "gunpowder empire" came anywhere close to the scope and impact on world history of the horsepower-driven Mongol Empire.

tributed to a battlefield tactical complementarity between cannon and cavalry. Cannon contributed to the defensive power of an infantry formation in place, and could soften up a similarly immobile defensive position. But artillery could not advance even at an infantry pace, so cavalry retained a vital offensive role even where massed infantry forces predominated, at least numerically, on the battlefield. And the immobility of artillery and its slow rate of fire made artillery emplacements vulnerable to cavalry charges, especially if the charges came from an unexpected (non-frontal) direction. Artillery crews, often made up of non-military engineer specialists, had to either flee to the protection of a nearby infantry formation in the face of such a charge, or be slaughtered at their guns. Cavalrymen could, if properly equipped, then spike the guns, destroying the touch hole by which the gun was fired and ending the gun's day. Cannon emplaced behind a fortification, whether a permanent fortress with all its accumulated labor power in place or even a rapidly thrown up field entrenchment, proved a definite problem for cavalry forces — the combination of fortifications and guns was one of the key factors that helped sedentary societies close in and, by 1700 or so, effectively contain the horsepower driven threat posed by steppe nomadic societies, as noted above.

The more direct challenge to the battlefield role of cavalry came from hand-held gunpowder weapons (and hand-held guns were at least as important as artillery in conjunction with fortifications in the closing of the steppes). But here guns fit far more closely into traditional battlefield dynamics than gunpowder artillery did. Horses had always been vulnerable to missile weapons, because horses are large, and thus, despite their speed (which was negated in a frontal charge in this view), made easy targets. Furthermore, infantry missile weapons, especially ones that could not easily be used from horseback such as iron crossbows and longbows (or then, muskets), generally outranged cavalry missile weapons (including pistols), and so were useful in holding off cavalry charges, in particular when range or power was not balanced against slow rate of fire. This was the advantage English longbows had over contemporary crossbows, for example, and slow rate of fire was for centuries the key disadvantage of hand-held guns against cavalry charges, a problem only ameliorated when the invention of the bayonet made every musketeer into a reasonable pikeman. In any case, the important role cavalry continued to play on Napoleonic battlefields demonstrates that even at their smooth-bore peak, gunpowder weapons could not displace horsepower from its central role in providing military energy.

Motorization and Cavalry



Cinematic release poster for "Warhorse"

Minie balls, rifled muskets, and generally increasing firepower across the nineteenth century, however, kept magnifying the energy impact of explosives on the battlefield and thus increasingly restricted the scope of cavalry action. Unlike infantry, cavalry could not entrench themselves against greater firepower. But the continued importance of horsepower for transport that we noted above, especially in regions beyond the reach of firepower such as logistical transport and even as the motive force for positioning firepower weapons meant that the final eclipse of horsepower as a key element of military energy came only with widespread motorization of transport. It was therefore the ongoing effects of the Industrial Revolution, from the early nineteenth century through the middle of the twentieth, that gradually eliminated horses from the global military equation, if not from the cultural image of what makes for a human's heroic military assistant, as we noted at the beginning of this article.

Railroads began the motorization process, of course, but the limits on where tracks could be or already were laid (once war broke out) meant that the impact of railroads were almost exclusively on the strategic level of war. It was the invention of the internal combustion engine and its application to military purposes beginning in the early twentieth century that finally allowed the replacement of literal horsepower with mechanical engine power, measured, tellingly, in units of horsepower. And to reiterate the point we began with, this process of replacement took longer and spread more gradually than is sometimes acknowl-

edged, as the horse-drawn dependence of the German Wehrmacht at the start of World War II reminds us, against the mechanized image of blitzkrieg that force projected.[13] But even over the course of that war, American trucks came to play, arguably, as important a role as the iconic tank in the outcome. By 1945, the age of equine warfare was over.

Conclusions

Thus, to use the image that is inevitable here, horses rode off into their military history sunset. What they left behind, however, to return to beginning of this article, was an indelible cultural image of military utility, heroism, and companionship that continues to inform the human imagination about warfare. Whether horses share the anthropomorphized romanticism that shapes this imagination is very much open to question. But for humans the impact of equine military horsepower is undeniable. From Troy through John Wayne westerns to the 2011 Spielberg film "Warhorse", set in World War I, horses accompany us into armed violence. Stripped of the actual military violence, the enduring romantic images of American cowboys, the competitive appeal of thoroughbred horseracing, and horseless SCA jousts continue to keep the image alive.

All of which argues, on the cultural level, for the unmatched impact that the domestication of horses by Proto-Indo-European-speaking peoples north of the Black Sea over 6000 years ago had on human war making and history. In the longue durée, horsepower was *the* military revolution.

13 The millions of horses used in World War II is also a reminder that even the production of equine horsepower had become "industrialized" to meet the huge demands armies without engines still generated.

Cavalry in Battle in Italy, 1000-1200

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During the High Middle Ages, it was generally accepted within Latin Christendom that a mounted knight was far more far more valuable in warfare, and in particular far more effective in battle, than a common infantryman.[1] Of course, knights were much more expensive to equip, maintain, and hire than footmen, and most armies included more infantry than cavalry, often several times as many. Despite this numerical imbalance, however, collectively the *milites* or *equites* (knights) were viewed as much more important than the *pedites* (foot soldiers). The knights were considered superior not just because they fought from horseback: they were also presumed to be better trained, armed, and armored, more accustomed to fighting, and braver. Thus, when specific tactical circumstances called for it, commanders might order some or (more rarely) all of their *equites* to dismount and fight on foot, temporarily becoming a superior sort of infantry (though usually not, even then, being called *pedites* in the sources). But those cases were exceptions: in general, knights fought from atop their warhorses, and medieval observers—including knightly as well as clerical writers—had no doubt that their ability to do so was a large part of what made them so effective. It took the lesson of the battle of Courtrai in 1302 to call into question the general presumption that (as Robert of Artois reportedly said just before the combat), "one hundred horse are equal to one thousand footmen."[2] Indeed, even in the late fourteenth century, when knowledge of the English victories over the French at Crécy and elsewhere might have led him to a different conclusion, personal experience still left the veteran knight Guttiere Diez de Games confident that "a good man mounted on a good horse can do more than ten other men, and in an hour of fighting he may even do more than a hundred."[3]

1 I owe thanks to Daniel P. Franke for commenting on a draft of this article.

2 Lodewijk van Velthem, *De Guldensporenslag,* ed. W. Waterschoot (Den Haag: Martinus Nijhoef, 1979), 64: "Wi sijn tors ende si te voet. Hondert orsse ende dusent man, dats alleens."

3 Gutierre Diez de Games, *Cronica de don Pedro Niño, conde de Buelna,* ed. Eugenio de Llaguna Amirola (Madrid: Antonio de Sancha, 1782), 8. In 1111, Tancred d'Hauteville,

Until about fifty years ago, historians generally accepted that from Carolingian times (or earlier) through the thirteenth century was, militarily, an "Age of the Horse." Heavy cavalry was the "principal," "decisive," "dominant," or "predominant" arm, and enjoyed tactical "hegemony" or "supremacy" as "the chief factor in battle,"[4] while in most parts of Europe infantry generally acted "only…as a very subsidiary force": "secondary," or "auxiliary," with "no great part in the winning of the day."[5] When it was published in 1979, the statement in the *New Cambridge Modern History* that "for most of the Middle Ages, the principal arm in any military force was the heavy cavalry" would still not have been very controversial.[6]

But not long before then, Bernard S. Bachrach had launched a forceful attack on the traditional understanding of the role of cavalry in medieval warfare.[7] Bachrach started with a reconsideration of early Carolingian warfare, but he and others eventually applied his logic much more broadly and concluded that it was valid for the Middle Ages as a whole. The essence of the revisionist position, which has been widely accepted by Anglophone medieval military historians, is that the "supremacy of knightly cavalry" both with respect to medieval warfare in general and more specifically to the battlefield, is only a "myth." Earlier historians, in this view, were too willing to accept medieval sources (mostly written by members of knightly families and heavily biased in favor of the aristocratic horsemen) at face value.[8] A major part of the argument is that "siege

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prince of Galilee, likewise seems to have expected each of his knights to be worth as much as (or more than) 100 Muslim footsergeants. Usamah ibn-Munquidh, *An Arab-Syrian Gentleman*, tr. Philip K. Hitti (New York: Columbia U.P., 1929), 125.

4 J. F. Verbruggen, *The Art of Warfare in Western Europe during the Middle Ages,* tr. Sumner Willard and Mrs. R. W. Southern, 2nd ed. (Woodbridge: Boydell, 1997), 19, 23, 25, 27, 211; Philippe Contamine, *War in the Middle Ages*, trans. Michael Jones (Oxford: Blackwell, 1984), 31; Hans Delbrück, *Medieval Warfare,* tr. Walter J. Renfroe, Jr. (Lincoln: U. of Nebraska Press, 1982), 273; Charles Oman, *A History of the Art of War: The Middle Ages* (London: Methuen, 1898), 355-56.

5 Ibid., 355; Hans Delbrück, *Geschichte der Kriegskunst, im Rahmen der politischen Geschichte,* part 3 (Berlin: Georg Stilke, 1907), 248 ("The foot soldier…[was] only an auxiliary of the knight"); Verbruggen, *Art,* 23, 211.

6 Geoffrey Parker, "Warfare," in *The New Cambridge Modern History,* vol. 13 (*Companion Volume*), ed. Peter Burke (Cambridge: C.U.P., 1979), 203.

7 Starting with "Charles Martel, Mounted Shock Combat, the Stirrup, and Feudalism," *Studies in Medieval & Renaissance History* 7 (1970).

8 For the fullest settings forth of the revisionist stance, see Bryce Lyon, "The Role of Cavalry in Medieval Warfare: Horses, Horses All Around and Not a One to Use," *Mededelingen van de Koninklijke Academie voor Wetenschappen, Letteren en Schone Kunsten van België, Klasse*

warfare dominated medieval warfare," and that "the heavily armored knight on horseback….had at best a minor role to play" in it, since "there was no place for the warhorse in the sapper's mine, the artilleryman's battery, or the crossbowman's belfrey."[9] I think that is misleading, or indeed simply incorrect, because an army could only conduct a siege if it could reach an enemy fortification and supply itself once it got there, and an army inferior in cavalry would often be hard-pressed to do either of those things.[10] My logic regarding the *strategic* importance of cavalry, however, admittedly rests in part on the *tactical* importance of mounted fighters, which is also disputed by the revisionists. In their view, cavalry "was never militarily superior to foot soldiers" and "did not win battles"[11]: the age of cavalry dominance was "never."[12] On the contrary, "foot soldiers remained…tactically dominant…on the battlefields of Europe…during the entirety of the medieval millennium."[13]

It is this part of the larger dispute—the relative importance of cavalry and infantry *in battle*—that I will address in this article. More specifically, I will focus on Italy from 1000-1200. Narrowing the field in that way makes the dataset that needs to be considered manageable. Moreover, it should suffice to support the larger point, since the cavalry-skeptics often draw their principal counter-examples from High Medieval Italy,[14] while even the supporters of the traditional view also point to Italy (along with Flanders) as the part of Europe where mount-

der Wetenschappen 49 (1987), and Bernard S. Bachrach, "Verbruggen's 'Cavalry' and the Lyon-Thesis," *Journal of Medieval Military History* 4 (2006). For the "myth," see: Matthew Bennett, "The Myth of the Military Supremacy of Knightly Cavalry," in Matthew Strickland, ed., *Armies, Chivalry and Warfare* (Stamford, 1998); Matthew Bennett and Nicholas Hooper, *The Cambridge Illustrated Atlas of Warfare: The Middle Ages, 767-1487* (Cambridge: C.U.P., 1996), 154; James G. Patterson, "The Myth of the Mounted Knight," in *Misconceptions about the Middle Ages,* ed. Stephen Harris and Bryon L. Grigsby (New York: Routledge, 2010), p. 91; Richard P. Abels, "The Myths of Feudalism and the Mounted Knight," in *Seven Myths of Military History,* ed. John D. Hosler (Indianapolis: Hackett, 2022); Bernard S. Bachrach, "The Myth of the Mounted Knight" as a subheading in his chapter in *The Cambridge History of Warfare,* ed. Geoffrey Parker (Cambridge: C.U.P., 2005), 82.

9 Bernard S. Bachrach, "Medieval Siege Warfare: A Reconnaissance," *Journal of Military History* 58 (1994): 125-27, 131, 133.

10 Space does not allow developing these points here, but I discuss them thoroughly in an article that should appear in the *Journal of Military History*.

11 Lyon, "Role," 90.

12 Patterson, "Myth," 91.

13 Bernard S. Bachrach and David S. Bachrach, *Warfare in Medieval Europe, c. 400- c. 1453* (New York: Routledge, 2017), 276.

14 See below.

ed knights were *least* tactically dominant—that is, where infantry, though still of only secondary importance, was more significant than elsewhere.[15] Thus, if examination of this narrowed set of examples were to show that indeed cavalry was *not* dominant, that would be significant but not conclusive support for the broader validity of the cavalry-skeptical view. But if we find that High Medieval cavalry *was* the dominant arm even in one of the regions where infantry was *most* important and effective, that will constitute a fairly conclusive demonstration that the traditional view was correct more broadly, and the revisionist view is not.

Before we begin to delve into a battle-by-battle assessment of the relative importance of the two main tactical arms, we should pause to underline what is at stake in terms of our understanding of history in general. In the traditional view, the *military* dominance of heavy cavalry goes a long way towards explaining the *social, economic, political, and cultural* dominance of the knightly class in medieval society, and thus to understanding both the structures and the developments of medieval history, including "feudalism" (another concept now much derided by revisionist historians). If, however, the perceived tactical superiority of the heavy cavalry was a mere culturally shaped illusion, rather than reflecting an underlying military reality, then many of those structures and developments must be viewed as in some sense irrational. The latter, indeed, is essentially the revisionists' conclusion: "The centuries-old and deeply ingrained belief that mounted men surpassed all others so blinded ruler, aristocrat, and general to the realities of the battlefield that there was not only defeat in the field and needless sacrifice of men and their mounts but also indefensible costs" to rulers and to societies.[16] "Prejudice, innate conservatism, caste spirit, rank and status," rather than sensible allocation of available resources in order to accomplish political objectives through military means, become the driving forces.[17] In other words, this case study has large implications for one of the biggest questions that all historians must grapple with: the relative weight of rational considerations and non-rational factors in shaping socio-political structures.

The Norman Battles of the Eleventh Century

Early eleventh-century Italian sources tend to be extremely laconic in their descriptions of combat, and tell us nothing about the tactics of Acqualonga (1002), Ripafratta (1004), Civita (1017) or Vaccarizia (1017). But for the 1030s

15 E.g. Oman, *History* (1898), 377, 355; Verbruggen, *Art*, 144-45.

16 Lyon, "Role," 90.

17 Ibid., 90 and 88.

and 1040s, we have several chroniclers who describe the first steps of the path that ultimately led to the Norman domination of southern Italy, including Sicily. Geoffrey of Malaterra, William of Apulia, and Amatus of Montecassino all provide a biased, Norman, version of the story, but nonetheless, as G. A. Loud says, "there is enough agreement between them to suggest the basic truth of the account (especially since there is corroboration from the Greek history of Skylitzes)."[18]

In 1036-37, a group of Norman knights first entered the service of the Lombard prince of Capua, then switched to the side of his enemy, the prince of Salerno. No battles or skirmishes are mentioned, but their effectiveness at raiding and devastation is emphasized by Malaterra. When the governor of Byzantine territory in Italy assembled an army for a planned reconquest of Sicily, he recruited the Normans to join his force. They fought in three battles in 1038, the first outside Messina, the second outside Syracuse, and the third and largest at Troina. Our main source, Malaterra, has only a little detail about any of them, but what he tells us about Troina is sufficient for our purposes. After the apparently indecisive clash at Syracuse, the Sicilians collected a large army, intending to offer battle. William d'Hauteville advanced in front of the main Byzantine army and "began the decisive combat, engaging the enemy with only his Norman knights [*cum suae gentis tantum militibus*], before the Greeks even arrived on the field."[19] The Normans then routed and pursued the Sicilians, leaving the rest of the Byzantine army to collect the plunder of the defeated Muslim army. There is only one reasonable way to interpret what Malaterra is saying here: that the battle was decided by a charge of heavy cavalry, delivered right at the start of the fight.

This conclusion helps confirm what would also be the most natural reading of Malaterra's even briefer description of the first combat: "at Messina the most redoubtable cavalrymen [*milites*] of their [the Sicilian] people were stationed, and they came out of the city and many of them struck the Greeks, but, as the Greeks were giving way, an opportunity presented itself for our men to engage. The Messinians, never before having experienced the prowess of our men,

18 Graham Loud, *The Age of Robert Guiscard* (London: Routledge, 2000), 79.

19 Geoffrey of Malaterra, *De rebus gestis Rogerii Calabriae et Siciliae comitis et Roberti Guiscardi ducis fratris eius,* 1.7. The best edition of the first two books of Malaterra is now the one by Marie-Agnès Lucas-Avenel, available online at https://www.unicaen.fr/puc/sources/malaterra/; for books 3 and 4 the best is that edited by Ernesto Pontieri in *Rerum italicarum scriptores,* 2nd ed. (Bologna: Nicola Zanichelli, 1925-28) vol. 5, pt. 1. There is also an English translation available by Kenneth Baxter Wolf: *The Deeds of Count Roger…* (Ann Arbor: U. of Michigan Press, 2005).

pressed them very fiercely at first. Then, seeing themselves suffering exceptional harm, as if shrinking from the knights of this new people [*quasi novae gentis militiam abhorrentes*], they turned their backs." The Normans pursued them all the way to the city, and the Byzantines captured the place as a result.[20] Amatus of Montecassino concurs that 300 Normans were worth more than the multitude of Greeks, and the glory of the victory was attributed to them.[21] Again, there is no real room to doubt that our sources are describing a battle won by a small force of Norman knights, fighting as cavalry, and there is no good reason to doubt that their story is basically true.[22]

20 Malaterra, 1.7. I consider my translation of *milites* as cavalrymen (or, when referring to Normans, as "knights," meant in the military but not necessarily the social sense) to be justified, beyond the general usage of the time, by Malaterra's description of armies as divided into *milites* [cavalrymen/knights] and *pedites* [footmen] in 2.46, 3.37, and 4.10, parallel to "equitum et peditum" and "equitum peditumque," etc., in 1.21, 2.5, 3.5, 4.22, 4.24; note also 4.26 "militibus equos ascendans"; and in 2.32 "his quae militibus suis necessaria erant" includes "equos." Georgios Theotokis, in "Geoffrey Malaterra As a Military Historian for the Norman Expansion in Italy and Sicily—Strengths and Weaknesses in His Narrative," *Mediterranean Chronicle* 2 (2012), 105-115, implicitly agrees, frequently translating Malaterra's "milites" as "knights." It is true that Jean Flori reached a different conclusion—that *milites* in Malaterra might mean "soldiers" or "warriors" more broadly—but while he observes that the term only definitely means cavalrymen in 25 of 82 usages, he does not cite any instances where it clearly does *not* mean cavalrymen. He generalizes that the word is used for garrisons, who "ne sont pas toujours pourvus de chevaux, mais n'en sont pas moins nommés *milites*." He cites in support only the case of Robert Guiscard's foray from Scribla in 1.16, but this passage actually supports my position. Guiscard's force included sixty Slavs who were infantry; Robert ordered them to go in front and told them that the *militibus armatis* would follow them. (These *militibus armatis* later in the same passage appear as just milites, and the Slavs are later described as *armatos*, so it is clear that he was distinguishing the Slavs from *militibus* rather than from *armatis*). The raiders were pursued by 200 enemy *militibus*, who must have been cavalrymen because after they were defeated, from the spoils of the victory Robert turned the Slavic *pedites* into *equites*. At no point are the Slavs clearly included in the group of *milites* of the garrison. Cf. Jean Flori, "Lexicologie et société: les dénominations des milites normands d'Italie chez Geoffroy Malaterra," in Hélène Débax, ed., *Les sociétés méridionales à l'âge féodal (Espagne, Italie et sud de la France Xe-XIIe siècle)* (Toulouse: Presses universitaires du Midi, 2020), 271-78.

21 Amatus of Montecassino, *Ystoire de li Normant,* ed. O. Delarc (Rouen: A. Lestringant, 1892), 59.

22 John Skylitzes, *Synopsis of Byzantine History*, tr. John Wortley (Cambridge: C.U.P., 2010) gives no details of these battles, but later (380) notes that the Norman Hervé Frankopoulos "had fought with Maniakes in Sicily and gained many great victories," which provides some independent confirmation of a decisive role for the Norman knights at Troina and Messina. Moreover, the same author (452-53) describes another battle of 1057 where Hervé, with 300 "Frankish" cavalrymen, put a Turkish army to flight. Thus, it is clear that this well-informed Byzantine chronicler, who was particularly attentive to

The next battle to consider, Olivento (or Lavello), was fought on the mainland three years later. This time the Normans who had occupied Melfi opposed a large Byzantine army raised mostly in Apulia. The Normans had 500 knights and 700 infantry. The latter were positioned to protect the flanks of the cavalry, and firmly ordered not to budge from their position. The battle opened with a clash between a unit of Norman knights [*cuneus…equestris*], who advanced past their infantry, and a contingent of Byzantine thematic cavalry led by the Byzantine commander in person, which came out to meet them. An attack by William and Drogo d'Hauteville, "two very valiant knights," and their "companions," put the opposing force to flight. When the Norman knights defeated the best of the Byzantine army, led by the overall army commander, the rest of the large but shaky[23] force collapsed. Some reading between the lines is necessary, but the sources do specify that the infantry of the Normans had a passive mission, and that the Normans attacked to win the battle, and that the battle began with a cavalry clash. Since no mention is made of the Norman infantry actually doing any fighting at all, it would require a tendentious reading of the sources to conclude anything other than that this battle, too, was decided purely by cavalry.

Two more Norman victories over the Byzantines followed in that same year (the battles of Cannae or Monte Maggiore and of Montepeloso). There are very good reasons to conclude that these too were won by charging knights,[24] but the

military affairs, would not have found the Latin chroniclers' claims of battles decided by small forces of Norman knights to be inherently implausible. Nicephoras Phocas, in the tenth century, provides an explanation of how this is possible: he says that in battle it is necessary "above all else" to charge the enemy commander with a wedge of cataphracts, which will cause the enemy to be overcome and flee. Quoted in Stephen Morillo, Jeremy Black, and Paul Lococo, *War in World History: Society, Technology and War from Ancient Times to the Present*, vol. 1 (New York: McGraw-Hill, 2008), 155.

23 Implied by Skylitzes, 401 ("reluctant").

24 William of Apulia states that the Byzantine commander was defeated at Ofanto by the Normans "just as" or "in the same way that" he had been defeated before" [*ut cesserat ante*], i.e. in the same way as at Olivento. Guillaume de Pouille, *La geste de Robert Guiscard,* ed. and tr. Marguerite Mathieu (Palermo: Bruno Lavagnini, 1961), 112. Also, there is no doubt that the Normans did win, and it is hard to imagine any way they could have done so, despite being very heavily outnumbered (ibid.) other than by exploiting an asymmetric advantage in heavy cavalry, as they repeatedly did in other battles. At Montepeloso, according to William, the decisive moment came after a Greek attack nearly won the battle, when Count Walter "charged suddenly into the midst of the enemy, encouraging the fleeing Normans to return to the battle." (Ibid., 120) As we will see below, it is not terribly unusual for a defeated cavalry force to rally and return to the fight. It is, however, extremely rare for defeated infantry to do that, especially if the army that initially put them to flight includes cavalry, which the Byzantine force at Montepeloso undoubtedly did.

sources do not make that absolutely clear. Roger of Sicily's victories at Monte Turonem in 1063 and Misilmeri in 1068 (to break briefly from my chronological sequence) likewise were probably but not indisputably won purely by cavalry.[25]

That brings us to the largest and most important battle of the Norman conquest, which is also the most fully described in our sources. At Civitate in 1053, the Normans were again heavily outnumbered. This time their almost 3,000 horsemen and a few infantrymen faced not a Byzantine army, but a Latin one that had been assembled by Pope Leo IX, who wanted to rid the country of these rapacious foreigners and safeguard his own lands and people. The papal army was made up of a substantial force of Germans sent by the emperor, including 700 elite Swabian swordsmen, and a large number of Italian soldiers. The Germans were arrayed in close order on foot. The Norman cavalrymen were arrayed in divisions under three commanders: Humphrey d'Hauteville in the center, facing the Swabians and some of the other Germans; Humphrey's brother Robert Guiscard to his left, facing the rest of the Germans; and Richard of Aversa on the right, facing the Italians. Richard opened the battle with a cavalry charge that immediately drove off the Italians, "like doves with a hawk in pursuit." As Richard pursued the fleeing Italians, Humphrey attacked the Swabians. They, "resolved not to yield an inch," halted his attack. Seeing his brother's division checked, Robert "charged fiercely and proudly into the midst of the hostile ranks." The Swabians, however, continued to hold their ground. Finally, Richard of Aversa, having returned from the pursuit of the Lombards, "charged into the midst of the enemy." The Swabians, surrounded and now outnumbered, were wiped out.[26]

The basic facts are not disputed, but the interpretation of them is. The traditional view was that Civitate (along with Hastings a few years later) confirmed and extended the predominance of the knights, as "the old world of Germanic

25 Our only source for Misilmeri (Malaterra, 2.41-2) gives no real tactical detail, but does imply that the victors were all knights, since before the fight Count Roger addresses "all his men" as "noble men, even more noble than your noble ancestors" (*nobilium praedecessorum nobiliores*). Also, they again attacked and defeated a much larger army and (according to Malaterra) nearly wiped it out, something only cavalry would have any possibility of doing. Roger's force at Monte Turonem, which was fought near Agrigento at the end of a Norman plundering raid, appears to have been composed entirely of cavalry—200 *milites* and their *armigeri* (squires, who were in charge of the plunder), opposing 700 North African and Arab cavalrymen (*electis militibus*). Ibid., 2.35.

26 This is essentially all from William of Apulia, 142-45; the quotations are as translated by G. A. Loud. For a detailed modern account, taking account of all the less-important (for tactics) sources, see Charles D. Stanton, "The Battle of Civitate: A Plausible Account," *Journal of Medieval Military History* 11 (2014).

infantry tactics went down before the new chivalry of heavy cavalry."[27] John Gillingham, on the contrary, argues (partly on the evidence of Civitate) that in this period "knights were far from being the masters of the battlefield"[28]:

> according to William of Apulia's *Deeds of Robert Guiscard*, once the pope's Lombards had ridden away in flight, the 700 Swabian foot soldiers who remained put up a prolonged and stout resistance against several thousand Normans. If anything Civitate demonstrates the strength in battle of infantry even when hugely outnumbered.[29]

There are two points that should be made here, however. First, it was the the bold charge of Richard of Aversa's "squadron of illustrious knights" that scattered the Lombards.[30] That initial cavalry success practically guaranteed that the battle would be Norman victory. Even if the papal infantry had somehow managed to hold off the Norman cavalry until nightfall and then escaped in darkness, the pope's forces would still have failed to accomplish the mission they were mustered to accomplish, while the Normans would have succeeded in breaking up the army moving against them.

Second, not only was it an initial cavalry charge that essentially decided the battle would be a Norman *victory*, it was also a subsequent cavalry action that ensured it would be a *crushing* Norman victory: Richard's charge into the mass of the Swabians, which William says was the "great cause of the ruin" of the footmen, who were slain practically to a man.[31] In the aftermath of this lopsided defeat of the papal forces, the Normans were able to capture Pope Leo himself. He consequently recognized Norman rule over southern Italy, making the battle as decisive strategically as it was tactically. "Prolonged and stout resistance" that ends in the utter extermination of the stoutly resisting infantry, and the complete strategic as well as tactical success of the side with the superior cavalry, is hardly compelling evidence *against* the proposition that mounted knights dominated medieval battlefields!

It is, of course, an undisputed historical fact that the same Robert d'Hauteville who led a division at Civitate went on, as leader of the Normans in Italy,

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27 R. Allen Brown, *The Normans* (Woodbridge: Boydell, 1984), 110.

28 John Gillingham, "An Age of Expansion, c. 1020-1204," in *Medieval Warfare*: *A History*, ed. Maurice Keen (Oxford: Oxford U.P., 1999), 77-78.

29 Gillingham, "Age of Expansion," 64. Note also Bennett, "Myth," 309: Civitate "used to be read as confirming the superiority of 'knights' over…footsoldiers….Indeed, I used to believe it. I no longer do so."

30 William of Apulia, 142 (*clara cohors equitum*).

31 Ibid., 146 (*Acies praeclara Ricardi / Addita victoris, magnae fit causa ruinae / Hostibus*….). See also Malaterra, 1.14.

to conquer the southern half of the peninsula, and then, along with his younger brother Roger, to add Sicily to the family's dominions. If we did not have any tactical information at all about how the Normans won the battles involved in those conquests, it would be quite reasonable to presume, given what we know of Massena, Olivento, and Civitate, and considering that they could hardly have been so strategically successful without some asymmetric tactical advantage, that they did so thanks to the superiority of their cavalry. But we can do more than presume, since we have near-contemporary descriptions of the battles of Castrogiovanni (1061), Cerami (1063) and Catania (1081) penned by Geoffrey of Malaterra. None of these provide more than a brief sketch of the action, but together they paint a clear picture.

Before Castrogiovanni, the two d'Hauteville brothers, with a small "army of horsemen" about 700 strong, advanced into Muslim territory on Sicily hoping to provoke a battle.[32] They were met by a much larger force including North African as well as Sicilian forces. The leading divisions of the two armies charged each other in what seems to have been a pure cavalry engagement: certainly it was so on the Norman side, since the Norman force, as already noted, was an *equestri exercitu*. The Muslims were defeated, the rest of their army broke and fled, and the Normans pursued, inflicting heavy casualties.[33] The next combat, Cerami, began with a very small force of knights charging and scattering a much larger force of Muslim cavalry and infantry. The fugitives rallied at their camp, and the pursuing Normans (just 136 knights, according to Malaterra) had a tough fight, but ultimately emerged victorious. The day after the battle, they attacked Muslim infantry who had fled to the mountains, killed many of them, and then took many prisoners, who were sold for a huge profit.[34] At Catania, the Normans opened the battle with a cavalry charge against Muslim infantry, and this time were initially checked by the footmen. After regrouping, however, the knights shifted to attacking the enemy cavalry. Once it was driven off, the Norman horsemen turned their attention back to the infantry, routed it, and again inflicted a great slaughter on the fugitives.[35] Thus, in all three battles heavy cavalry, operating without any infantry support, carried the day.

32 Malaterra, 3.13, "equestri exercitu"; 3.16 "volentes…proelium"; 3.17 (number).

33 Malaterra, 3.17. On the Muslim side, the first division "boldly attacked" to open the battle, something an infantry force would be most unlikely to do against Norman cavalry; moreover, Malaterra tells us that in the aftermath of the battle, the Normans had collected so many horses as plunder that a man who lost one in the fight received ten to replace it.

34 Malaterra, 2.33.

35 Malaterra, 3.30.

Adding these three cases to the ones already discussed, we have seven battles that were clearly won by cavalry; four more that probably were, though the sources are not clear enough to say for certain; and *none* in which there is any indication that the infantry played any major role in the victory, much less the principal part, though in at least two battles the defeated infantry did make a relatively good showing before being wiped out. If we follow the contemporary sources, therefore, we must conclude that in the Norman conquest of Apulia and Sicily the knights were indeed the "masters of the battlefield." To substitute for the evidence of the sources a preconceived assumption that cavalry "cannot" far surpass infantry in tactical effectiveness not only would be bad history in itself, it also would make incomprehensible the indisputable fact that a small number of Norman émigré knights managed to make themselves the rulers of Italian territories roughly three times as extensive as Normandy itself.

The Twelfth-Century Battles from Nocera in 1132 to Senio in 1169

Our sources for the military history of the twelfth century in Italy are somewhat richer and more varied, and in them we can see a more substantial role for footmen, but not in a way that challenges the status of the cavalry as the "dominant arm." To make this clear, we will briefly examine in chronological order the Italian battles from Nocera in 1132 to Senio in 1169. In nearly all of these combats, cavalry clearly played the principal (or the only) role in achieving victory. In no case was the reverse true.[36]

We have a good description of the battle of Nocera from Hugo Falcone, who based his account directly on the testimony of men who fought there.[37] It was a relatively complicated engagement, involving four phases. In the first, Roger II of Sicily sent forward a cavalry charge that defeated the cavalry vanguard of the army of the rebel prince of Capua. This caused a panic in the central mass of the rebel army, with both horsemen and infantry taking flight and rushing for the bridge in their rear. The prince tried to restore the situation by committing

36 I.e. in no case can we say that cavalry clearly did *not* play the principal role, or that infantry did. The "nearly all" in the previous sentence is because in one battle (of cavalry against cavalry) there was no clear victor; in another the clarity of the case is arguably muddied by the death of the victorious commander during the pursuit.

37 Falcone di Benevento, *Chronicon Beneventanum,* 1132.10.10-27. Alexander of Telese's account is less full but essentially (for our purposes) confirms Falcone's. G. A. Loud provides translations of both in *Roger II and the Creation of the Kingdom of Sicily* (Manchester: Manchester U.P., 2012), 195-99, 87. For a thorough recent account, see Giovanni Amatuccio, "La battaglia del Sarno (24 Luglio 1132)," in *Scritti offerti… a Mario Troso*, ed. Giuseppe Mastomincio (Ariano Irpino: Centro Europeo di Studi Normanni, 2012), 13-32.

more cavalry to the action; these men briefly gained the upper hand, but another line of royalist cavalry counter-charged and again turned the tide of the battle in Roger's favor. But the knights of the prince's ally, Count Rainulf of Caiazzo, had not yet been engaged. Two waves of rebel cavalry swept in from one flank without deciding the issue, but then a third contingent charged from the other flank and ultimately overwhelmed Roger's cavalry. That sufficed to ensure the rebels' overall victory in the battle, for although the king had brought a large infantry force to the field, it took to flight when the royal cavalry was defeated, and played no role other than to add to the total of casualties on the royalist side when the victorious knights launched a mounted pursuit.

Rignano, five years later, was simpler. Again the battle opened with a successful cavalry charge, this time by Count Rainulf against King Roger's army. Again this initial victory caused a panic on the losing side. But this time there were no ready forces to ride to the rescue of the defeated, so the whole battle was decided by the initial mounted attack.[38]

Andria, in 1155, resulted from a Byzantine effort to recover the Italian territories lost to the Normans in the previous century. According to our only significant source for the battle, the Byzantine historian John Kinnamos, the Italo-Norman Count Richard of Andria brought a force superior in both arms to the field. The Byzantines, under Michael Doukas, arrayed in two equal lines of cavalry, preceded by a line of Cumans and foot-archers. Count Richard, "not capable of making any pretense of military science," simply launched a frontal charge with his cavalry. The first Byzantine line (containing the infantry) immediately dissolved at his approach. The second line, composed of cavalry, met him and resisted for a while, but was pushed back into the rear division, which was under Doukas's personal command. Here there was heavy fighting, but in the end, "pressing heavily with a fierce charge," Richard forced the Byzantines to retreat. Thus, in the army-against-army fighting, the Italo-Normans were victorious, and their victory was won purely by cavalry. This outcome, however, was in effect reversed after the Byzantine army was defeated. Doukas had fled to a dry-stone wall, and there some of the Byzantine infantry rallied to him. Count Richard, at the head of 36 knights, pursued him. A priest from Trani then managed first to unhorse the count with a large stone thrown from above, then to stab him in the gut with a dagger, inflicting a mortal wound. This reversal of fortune makes the judgment less clear than in other cases, but still it can be said that the dominant arm during the battle itself was the cavalry.[39]

38 Falcone, *Chronicon Beneventanum*, 1137.18.

39 Skylitzes, 112-13.

The campaigns of Emperor Frederick II ("Barbarossa") in the mid-twelfth century attracted substantial attention from contemporary historians, and involved a whole slew of field battles, the majority of which went in the Emperor's favor thanks in large part to the qualitative superiority his German knights enjoyed over Italian cavalry—and Italian infantry. The first battle to consider, fought outside Rome in 1155, was essentially a fight of just cavalry on one side against just infantry on the other. This unusual scenario arose because the citizens of the eternal city miscalculated the relative importance of quantity and quality in medieval battle. Overconfident in their numbers, the Romans chose to sally out from the safety of their walls, form a "phalanx," and offer battle to the emperor. Frederick's *equites,* both Germans and Ligurians, charged in on horseback and forced the infantry formation back. The phalanx, however, did not break for a long time. Many horses fell, struck through the chest by the infantry's spears. But in the end, near nightfall, the Roman infantry formation was destroyed. According to Otto of Freising, the Romans lost about a thousand men killed, with another six hundred captured, while on the imperial side only one knight was killed, and one taken prisoner.[40]

The men of Spoleto, "proud, bold" and "renowned and trained in arms" failed to learn the appropriate lesson, and when the imperial army arrived outside their city that same year, they sent infantry—mostly slingers and archers—to attack it. Barbarossa, reportedly remarking that the attacks of such missile troops seemed "like a game of boys, not a conflict of men," sent his knights into action. "The men of Spoleto were cut to pieces and, though they resisted manfully for some time, were forced to give way." Frederick's knights pursued the fugitives to the city gates, pressing them so closely that they got into the city, which thus was captured and sacked.[41]

At Palosco the next year, a major part of the fighting involved infantry on

40 *Carmen de gestis Frederici I. imperatoris in Lombardia*, ed. Irene Schmale-Ott, MGH SS rer. Germ. 62 (Hannover: Hahnsche, 1965), 24-26; Otto of Freising, *Gesta Friderici I. Imp.,* MGH SS rer. Germ. 46 (Hannover: Bibliopolii Hahniani, 1884), 113. For the *Carmen* in English see *Barbarossa in Italy,* tr. Thomas Carson (New York: Italica Press, 1994). Any readers who are inclined to think the casualty figures indict the reliability of the source should consult Clifford J. Rogers, *Soldiers' Lives through History: The Middle Ages* (New York: Greenwood, 2007), 214-16, 238-40.

41 *Carmen*, 32; Otto and Acerbo Morone [Morena], *Libellus de rebus a Frederico imperatore gestis,* in Franz-Josef Schmale, ed. and tr., *Italische Quellen über die Taten Kaiser Friedrichs I. in Italien* (Darmstadt: Wissenschaftliche Buchgesellschaft, 1986), 64; Freising, 115, using Christopher Mierow's translations, from *The Deeds of Frederick Barbarossa* (New York: Norton, 1966), 153.

both sides. The battle began with a dawn attack by the outnumbered Brescians against the unfortified camp and unready army of the Bergamese. Our source for the battle, the *Carmen de gestis Frederici I,* implies that at the outset of the fighting the Brescian horsemen routed their Bergamase counterparts. The next phase of the combat was a struggle between the rallied Bergamese infantry and the Brescian footmen. The Bergamese infantry not only repulsed the Brescian attackers, but put them to flight, forcing them to turn their backs. The battle would thus have had a mixed outcome, rather than being a clear-cut Brescian victory, had the Brescian cavalry not returned from chasing off the Bergamese horse to support their countrymen. These cavalrymen checked the advance of the Bergamese footmen and rallied their own infantry, who reformed and turned back to rejoin the fight. Even then the Bergamese infantry put up a stout fight against a combined-arms attack. In the end, though, the isolated footmen could not continue to resist, and were forced to surrender. Meanwhile the Bergamese horsemen, ashamed at having abandoned their countrymen, rallied and returned to the field. But they did not rejoin the actual fighting, and the Brescians declined to attack them, being satisfied to have defeated the Bergamese infantry and freed themselves to resume their attack on Palosco, which they soon captured.[42] Thus, it was apparently the Brescian cavalry that drove off the Bergamese horsemen, and certainly the Brescian cavalry that turned the later part of the fight from a Brescian defeat to a Brescian victory, thus "deciding" the battle. Even though the actual winning of the fight in the final phase was the joint work of infantry and cavalry, clearly the overall success of the victors owed more to their cavalry than to their infantry.

At Cassano near Trezzo in 1157, the victorious army fought partly on foot (though this almost certainly involved dismounted knights rather than common infantry), but the decisive action was again a mounted attack. The battle was fought when a body of Milanese soldiers tried to block the emperor's army from crossing the flooded Adda river. Positioned to defend a bridgehead, behind field fortifications, the Milanese could not simply be charged by the cavalry. The emperor therefore led forward a body of troops, on foot, to attack the Lombards, but the latter boldly held their ground...until they realized that some of the emperor's horsemen had managed to ford the river, which they had thought impassable, and were now coming at their backs. At that point the Lombards broke and ran, "out of their minds" with fear. As usual, the fleeing infantry, pursued by cavalry, suffered heavy losses in dead and prisoners. While the men on foot of

42 *Carmen*, 38-40.

the two sides had been struggling indecisively, the action of the imperial cavalry had determined the result of the battle.[43]

The next engagement, near Landriano in 1159, was a variation on the same theme: again, the Milanese had some initial success, but eventually suffered defeat at the hands of a cavalry force. The combat resulted from Barbarossa's attempt to use a body of 100 Pavian horsemen to lure the cautious Milanese cavalry into a fight. This detachment, however, was cut off by Milanese knights before reaching the ambush point. In the first phase of the fighting, the Milanese horsemen defeated the outnumbered Pavian cavalry and took a number of prisoners, as well as recovering the booty the Pavians had previously collected. But thanks to prompt action, the emperor arrived with his knights before it was too late to rescue his men. He charged and routed the Milanese, thereby not only saving the Pavians, but also capturing 300 of the best Milanese knights and 400 horses.[44]

One part of the battle of Carcano (1160), fought near Tassera, likewise began with a Milanese success and ended with an imperial victory. At the start of the action, the Milanese made a desperate and successful attack against a larger imperial force that had surrounded them while they were besieging Carcano. Many of the Italian soldiers on the imperial side fled, and the Milanese even reached the emperor's camp and began to plunder it, but the emperor in person organized a counterattack. The initial fighting was cavalry against cavalry; the imperials defeated the Milanese horse, who fled towards their infantry, grouped around their *carroccio* (their main battle-standard, mounted on a war-wagon), pursued by Frederick's knights. For a while, the Milanese footmen defended themselves manfully, supported by cavalry squadrons from Placentia and Brescia. When the imperial troopers drove off those mounted contingents, however, the main body of Milanese infantry was surrounded, now by imperial infantry as well as cavalry. Eventually the Milanese broke. Some found refuge in the fortified camp from which they had begun their attack, but many were killed or captured by the imperial troops.[45]

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43 *Barbarossa in Italy*, 73-75; *Carmen,* 68-71 (*mente furens*); Freising, 164; Morena, 78-82. The emperor advanced to attack the bridge, fighting in person, *on* foot ("pedestri"), not *with* foot as the Carson translation has it; it is extremely unlikely that he would have done this surrounded by common infantrymen rather than dismounted knights.

44 Morena, 98-100.

45 My account (this paragraph and the next) derives from the accounts of the *Carmen* (106-09; Carson tr., 115-18); Morena, 144-49; Frederick's letter on the battle (Ludwig Weiland, *Constitutiones et acta publica imperatorum et regum* [Hannover: Bibiliopolii Hahniani, 1893], 274-75), and Codagnellus and "Sire Raul," *Gesta Federici I Imperatoris in Lombardia*, ed.

At this point, however, Emperor Frederick discovered that what was in effect a separate battle had taken place in a different part of the field, near Orsenigo. There, the Brescian and Milanese cavalry had charged, routed, and slaughtered the men of Novara, Como, and other imperial forces, composed mostly or entirely of infantry.[46] Dismayed to see the rallied forces of Milan approaching his tired and disorganized men, the emperor withdrew, abandoning his camp. Each side had been victorious in one part of the field, and each claimed to have won the battle overall. For our purposes, the key point is that in each of what were effectively two separate battles, cavalry had been decisive and infantry had been put to flight.

In the remaining combats of the 1160s for which we have sufficiently detailed sources to make a judgment, the outcome of the fighting continued to be decided by cavalry forces. At Cerro in 1161, Frederick ordered his knights to attack simultaneously against the front and flanks of a smaller mixed force of Milanese horse and foot; the Milanese, seeing they were not strong enough to resist the attack, turned and fled. The emperor pursued, and there was some serious fighting at the bridge over the town's moat: the emperor's horse was struck down, and he himself was a little wounded. Though most of the Milanese escaped, the imperial *milites* returned to their camp rejoicing at having captured 80 knights and 266 footmen, as well as killing many others.[47] The same year there was an engagement (termed a battle, a *prelium*, in the source) at the church of St. Martin of Casetti near Lodi, between two forces composed entirely of cavalry. The Milanese horsemen won the first phase by charging against their foes from ambush, while the second phase was rather tepidly fought to a draw.[48]

Tusculum in 1167 began with Archbishop Christian of Mainz's small force of 500 imperial knights and 800 mercenary Brabançon sergeants (probably but

Oswald Holder-Egger, MGH SS rer. Germ. (Hannover: Bibliopolii Hahniani, 1892), 41-47, and follows the excellent study of John France in treating the combat as two separate battles. John France, "The Battle of Carcano: The Event and Its Importance," *War in History* 6 (1999), 245-61.

46 Morena (144) notes that Pavia provided a few knights; Novara provided both horse and foot; and that the men of Vercelli and Como also were in the imperial army; it's not quite clear if "atque cum Vercellensibus et Cumensibus" is intended to mean "with the horse and foot" of those places or just with the people (infantry) of those towns. It seems likely that the emperor would have taken some of the Italian cavalry with him (the "some Lombards" he mentions in his letter) when he and his German knights went to respond to the Milanese attack near Tassera.

47 Morena, 166-68.

48 Morena, 170-72.

not certainly cavalrymen) faced off against a very much larger mixed army of Romans. At the outset of the battle, the Romans broke the Brabançons by a vigorous attack, but then had their cavalry driven off by the German knights. At about the same time, the Roman footmen were hit in the rear by a sally of the knights who had been trapped in Tusculum, then by a flank attack by Archbishop Christian's reserve cavalry. With their line broken into three pieces, the Roman infantry lost heart and took to flight. The victorious horsemen inflicted a dreadful slaughter on the routed footmen, killing thousands of them.[49]

Senio in 1169 was reminiscent of Cassano. At this battle the men of Faenza, accompanied by many allies and some imperial officers, fought a smaller army of Bolognese troops who were holding a bridgehead over the Senio near San Procolo. As the main forces of the two sides (presumably both composed of mixed cavalry and infantry) fought inconclusively, the Faenzan commander sent a detachment of cavalry to circle around to the enemy rear. The unexpected attack of this cavalry troop broke the morale of the Bolognese, and they began to retreat. It can be inferred from the main source on the battle that most of the Bolognese cavalry escaped and that the infantry initially kept some order as they retreated. But in the end, with enemy cavalry harassing their rear, many of them surrendered. The defeat was complete: aside from the dead, some 400-600 Bolognese were captured, including both the city's consuls.[50]

Tallying all this up, and counting Carcano as two separate battles, we get eight battles from 1132 to 1169 where cavalry was clearly the "decisive arm" and infantry made little or no contribution to the victorious side,[51] and one more (Casetti) where cavalry was the *only* arm, but no decisive victory was won. At Senio and Cassano, men on foot—though almost certainly dismounted knights rather than common infantry in the latter case—made a significant contribution to the victory, but the decisive action was still a mounted attack. In two battles (Palosco and Tassera), the cavalry of the winners drove off the opposing horsemen and deserve the chief credit for the overall victory, though the final

49 The main sources are: Otto of St. Blasien, *Chronici ab Ottone Frisingensi espiscopo conscripti continuatio,* ed. G. H. Perz, in MGH SS 20 (Hannover: Bibliopolii Hahniani, 1868), 312; the continuator of Otto Morena, *Historia Frederici I*, ed. F. Güterbrock, MGH SS rer. Germ. N.S. 7 (Berlin: Weidmann, 1930), 196-99; Bishop Rainald's letter, in J. M. Watterich, ed., *Potificum romanorum…Vitae*, vol. 2 (Leipzig: Engelmann, 1862), 561-64; *Chronica regia Coloniensis,* ed. G. Waitz, MGH SS rer. Germ. 18 (Hannover: Bibliopolii Hahniani, 1880), 117.

50 Following Leandro Alberti, *Libro secondo della deca seconda dell'Historie di Bologna* (Bologna: Fausto Bonardo, 1591), 155-56.

51 Nocera, Rignano, Rome, Spoleto, Landriano, Orsenigo, Cerro, Tusculum.

destruction of the enemy infantry was effected by combined arms. In one *sui generis* case (Andria), the Italo-Norman cavalry won the main battle, though the death of the victorious commander during the pursuit reversed the strategic result. Although it is true that in several of these fourteen battles we can observe the infantry performing fairly creditably in a secondary role, there is nothing in any of them to use against the thesis that mounted knights "dominated" the battlefields of the Middle Ages.

Legnano and Rudiano

Specialists in High Medieval Italy have rarely expressed any doubt that infantry was generally of no more than secondary importance on the peninsula in the eleventh and twelfth centuries. As noted in the introduction, however, some medieval military historians in recent decades have tried to argue that infantry was more important than cavalry in all of Europe during the entire Middle Ages.[52] Many others, though not going to that extreme, have now rejected the once widely-accepted idea that a fourteenth-century "infantry revolution" ended a long era of cavalry dominance in Europe: "the importance of cavalry in the medieval period was never as great as commonly believed, so that the putative 'shift' from cavalry-based to infantry-based armies...is a chimera."[53] More than one historian has specifically cited the case of Legnano in 1176 to support this re-conception.[54] John France, for example, references Legnano as evidence for his claim that "it was by no means true" that Medieval warfare "was entirely dominated by knights," and Matthew Bennett uses the battle to support his generalization that "well-ordered footsoldiers [could] hold off knightly cavalry in almost any time or place."[55] Richard Abels likewise cites Legnano, where (he says) "municipal militias successfully defended the Carroccio…against attacks by Frederick Barbarossa's cavalry forces," to back up his assertion that "the idea of an 'infantry revolution' in the fourteenth century…is an exaggeration," and his observation that "infantry had been an important element in battles throughout the High Middle Ages."[56]

One problem with these uses of Legnano is that demonstrating that infantry

52 Bachrach and Bachrach, *Warfare*, 276; see also Lyon, "Horses," 90.

53 Burkholder, "Popular [Mis]Conceptions," 517, and see notes below.

54 See Alexander Querengässer, *Before the Military Revolution: European Warfare and the Rise of the Early Modern State, 1300-1490* (2021), 151-52, and the next note.

55 Bennett, "Myth," 312.

56 Abels, "Myths," 63.

was "an important element" *in any number of battles* would not actually invalidate either the idea of "cavalry dominance" in the High Middle Ages, or the idea of an "Infantry Revolution" in the fourteenth century, since the proponents of those ideas have for more than a century accepted that infantry was often *important* in the period, and could even be "very important"—just not "the *more* important arm."[57] So the first real question is not whether the footmen at Legnano were important—they certainly were—but *how* important they were, relative to the cavalry. The second real question, which I will reserve for the concluding section of this essay, is whether Legnano is a good example from which to generalize, or merely one of the exceptions baked into the rule that "infantry in *most* battles had no great part in the winning of the day."[58]

Even the strongest proponents of the "cavalry dominance" thesis have long recognized Legnano as a case where common infantry was more than "a very subsidiary force": where it could even be said to have tipped the scale in favor of its own side.[59] Some scholars, however, have claimed that the footmen in this battle did more than make a substantial contribution to the Lombard victory: not only checking Barbarossa's heavy cavalry but "shattering," "beating" or inflicting a "defeat" on Barbarossa's horsemen, "to win the battle."[60] If this were accurate, then Legnano would at least be one piece of evidence weighing against the idea that knights were the dominant arm—the "chief power in war," superior to or enjoying supremacy over all other types of troops—in High Medieval battles.[61] So, was the infantry at Legnano the "more important" arm?

At this point we must review the basic narrative of events. Before the battle, Barbarossa was marching with a small army, mostly or entirely made up of almost 3,000 cavalry, to join his allies in Pavia. With a somewhat larger body of horsemen and a strong force of infantry, the Lombards moved to intercept

57 E.g. Clifford J. Rogers, "The Military Revolutions of the Hundred Years' War," in idem, ed., *The Military Revolution Debate* (Boulder: Westview, 1995), 58, 57; Oman, *History* (1924), 231.

58 Oman, *History* (1898), 355.

59 Ibid., 355, 337. Note that scales can be tipped by adding a relatively small amount to one side that was already close to in balance with the other side. Hence, saying infantry in a particular battle tipped the scales to victory does not mean it was a larger factor than cavalry.

60 Lyon, "Horses," 82; Jim Bradbury, *The Routledge Companion to Medieval Warfare* (New York: Routledge, 2004), 234; Archer Jones, *The Art of War in the Western World* (Chicago: U. of Illinois Press, 1987), 334; John France, *Western Warfare in the Age of the Crusades, 1000-1300* (Ithaca: Cornell U.P., 1999), 64 (though France is more nuanced and more accurate on pp. 164-65); note also Bennett, "Myth," 312 ("cavalry *support*").

61 Oman, *History* (1885), 2, 16, 49.

him before the two imperial forces could unite. The Milanese, with their allies, probably had around 10,000 foot and 3,000 cavalry. They seem to have chosen a strong defensive position for their footmen, reinforced them with at least a few dismounted knights guarding the carrocio, then sent a large mounted reconnaissance force to probe for the imperials.[62] When the two vanguards stumbled into each other, the outnumbered German knights rapidly defeated the Italian horsemen. The main battle that followed can be divided into three phases. In the first, the imperial cavalry charged and drove off the remaining Lombard horsemen. Rather than pursuing the fugitives, Frederick's knights turned back against the now-isolated Milanese infantry. Romuald of Salerno tells us that Emperor Frederick expected it would be easy to defeat the remaining footmen,[63] and it is likely (given what had happened in the similar situations discussed above) that most of the men remaining on the field also expected him to win the fight in short order.

But, in the subsequent cavalry-versus-infantry combat, the Lombards, densely packed around their carroccio and (according to the *Chronica regia Coloniensis*) protected by large ditches, resisted successfully for several hours.[64] In this second phase neither horsemen nor footmen succeeded in gaining victory over the other arm. Had this combat of horsemen against footmen gone on long enough, it is likely that the knights eventually either would have won a complete victory (as the emperor had anticipated), or, failing that, would have simply given up the attack, pulled back from a battle that they could still claim as a partial success tactically, and proceeded to Pavia. Even that latter outcome would have made the battle a clear-cut imperial victory, though not a total one, from the strategic perspective.[65] But we cannot be certain what would have happened, because the simple cavalry-versus-infantry fight did not continue to the point of resolution. Instead, the stalemate was broken and the scale of victory was tipped towards the Lombards by a new, decisive action.

This decisive action, as usual, was a cavalry charge. While the emperor's

62 Paolo Grillo, *Legnano 1176* (Rome: Economica Laterza, 2012), provides a good, well contextualized account of the fighting; for a short treatment see Verbruggen, *Art,* 145-47; neither, however, agrees with my reconstruction at all points.

63 *Annales,* ed. W. Arndt, in MGH SS 19 (Hannover: Bibliopolii Hahniani, 1866), 441-42.

64 *Chronica regia Coloniensis,* 128-29.

65 As noted above, the Lombards had aimed to prevent him from moving to Pavia and to defeat him while his forces were divided; if the Milanese infantry had managed to hold off until the emperor gave up trying to destroy them and instead moved on, the Lombards would still have failed to accomplish their purposes.

knights had been locked in combat with the Lombard foot, some of the Italian horsemen who had fled from the initial German cavalry charge, finding themselves not pursued, had rallied. Joined and encouraged by cavalry reinforcements just arriving from Brescia, they returned to the battlefield and launched an unexpected attack against the flank of the emperor's knights, while the latter were still faced off against enemy infantry. It was this mounted charge, according to Otto of St. Blasien (and the logic of the situation), that won the battle for the Lombard League.[66]

66 *Continuatio Sanblasiana ad Ottonis Frisingensis chronicon,* MGH SS 20, 316: "Cesarianis…de victoria sperantibus, acies Brixiensium…erupit, exercitumque cesaris a latere irrumpens disiunxit, ipsumque…fugere coegit." It is true that Romuald, *Annales,* 441-42, has the Lombard infantry attacking simultaneously with the returning cavalry, but even if that is true (which I doubt), that was surely not simple coincidence after a long period of the footmen standing on the defense: rather, it would have to have been the Lombard cavalry charge that made it possible for the infantry to counter-attack. Cardinal Boso's *Life of Alexander III* implies—or at least has led many modern scholars to infer—that the imperial forces were defeated because the emperor was struck down and lost to view while charging the infantry. Many historians have suggested that this happened at the same moment as the cavalry charge, and attributed the outcome of the combat to these two elements in combination. But there are several points to be made here. First, the *Life* does not actually say the emperor was struck down while attacking the infantry, but rather while he was fighting "electa Mediolanensium bellatorum militia posteriori acie," which "erectis vexillis confidenter obviavit F. in virtute magna." *Liber pontificalis,* ed. L. Duchesne, vol. 2 (Paris: Ernest Thorin, 1892), 432-33. The main line of the Milanese infantry, however, was not *electa,* would probably not have been described by a twelfth-century writer as *militia* (a body of knights, *milites*), and was not likely to have advanced to meet Frederick (as *obviavit* rather than *expectavit* suggests, though it does not strictly require). Since the *Life* makes no separate mention of the late Lombard charge, Boso could well be confusing the return of the fugitives (with their Brescian reinforcements) with an attack by an elite knightly reserve coming up from the rear. (The text does say these men "tanquam murus impenetrabilis firmiter consistebant," but a cavalry reserve standing in position and arrayed in close order could look as much like an impenetrable wall as an infantry force would.) Second, no other source says the emperor was struck down by a footman—which would have been a very dramatic moment that any chronicler who believed it happened would likely have mentioned, especially any chronicler hostile to the imperial cause. Third, Cardinal Boso was sufficiently ill-informed that he even got the month of the battle wrong, placing it in June rather than May. He was also more concerned with drama than accuracy, and heavily biased against Frederick: see the introduction by Peter Munz to *Boso's Life of Alexander III,* tr. G. M. Ellis (Tottowa: Roman and Littlefield, 1973). I therefore place no reliance on Boso's account and doubt that (as many modern historians have said) Frederick was struck down by a footman while charging the Milanese infantry. But even if that did happen, a mounted commander struck down in front of an infantry line would normally either be killed or captured on the spot (which Frederick definitely was not), or otherwise would be able to fall back, get a new horse, and resume

Thus, it is true that the Milanese infantry "held off" the imperial knights—*for a time*, just as infantry formations had held off knights *for a time*, before being *completely destroyed*, at Civitate, Catania, Rome, and Tassera. But it misleading to suggest that Barbarossa's knights were beaten or defeated by the Milanese infantry. It is fair to say that in this case the infantry on the victorious side played an important, indeed a vital, role in winning the day—but it was still a supporting role, and the "decisive arm," as usual, was the cavalry. No sensible ruler of the time would have concluded from this battle that the "more important arm" was the infantry.

The last battle we will consider is Rudiano, also known as Malamorte. Fought between the armies of Brescia and Cremona in 1191, it was fairly similar to Legnano, and is actually a better example than the latter of the largest role infantry could play in a High Medieval battle. Unlike at Legnano, communal infantry on *both* sides performed well. In the first phase of the battle, a large part of the Brescian cavalry was defeated and chased off the field by enemy knights. In the second phase, the fighting was mainly between the footmen of the two sides, though it seems that some of the Brescian horsemen remained on the field, and others returned from their initial retreat to rejoin the fight. This combat went on for a long time. Casualties were heavy on both sides, and the advantage seemed to tilt alternately from adversary to the other. In the end the Brescians won, by the joint efforts of their knights and *popolo*. The most contemporary sources do not provide us enough detail to make it possible to weigh the relative importance of the two arms in this phase.[67] A fifteenth century source, however, indicates that the outnumbered Brescians were "being overwhelmed by the enemy" when a small force of their *milites* sallied out from the besieged castle (Rudiano) to charge the Cremonese in the rear, throwing their whole army into rout.[68] If we accept this version of events, which despite the lateness of the source seems credible, then as usual it was cavalry that decided the battle, though we can

fighting, as for example William the Conqueror did three times at Hastings, and Frederick himself did at Cerro. Therefore, even if it is true that Frederick was struck down at the same time as the Lombard flanking charge hit, then it was the charge, not that event, that was decisive: had he been struck down in the absence of a flanking charge, he could have recovered, whereas even in the absence of a fall, a flanking cavalry charge against a force already engaged in front could be expected to result in a rout.

67 Sicard, *Cronica,* in MGH SS 31 (Hannover: Bibliopolii Hahniani, 1904), 174; battle song in Frederigo Odorici, "La Battaglia di Rudiano detta di Malamorete," *Archivo storico Italiano,* N.S. 3, pt. 1 (1856): 20-22.

68 Jacobus Malevecius [Giacomo Malvezzi], in *Rerum italicarum scriptores* 14 (Milan: Societatis Palatinae, 1729), cols. 883-5.

still follow Aldo Settia in concluding that it was "only thanks to the efforts of the 'good infantrymen' that the fight finally turned into a disaster" for the Cremonese. Either way—whether the battle was won by a cavalry charge at the Cremonese rear or by more general joint action of cavalry and infantry—we can also accept Settia's view that Rudiano (with Legnano and Palosco) shows that even when the brave resistance of footsoldiers earned credit for sustaining a battle that would otherwise have been lost at the outset, the infantry "always proved insufficient to achieve final victory" on their own.[69]

Conclusion

Thus, even Legnano and Rudiano do not actually conflict with the observation that in the High Middle Ages the infantry was no longer the "more important arm," or the generalization that infantry in this period "did not win battles." True, it could reasonably be argued that in these two cases the communal infantry were comparable in importance to the knights who fought alongside them and *contributed* significantly to winning battles. But, as our examination of the other High Medieval battles in Italy shows, that was the exception, not the rule. The norm was that infantry either made no real contribution to victory at all, or else made a very secondary one. Cavalry, in other words, was the "decisive" or "dominant" arm, the "chief factor in battle," the principal determinant of an army's success or failure.

As we have seen, there were many different pathways by which cavalry could win a battle. Sometimes neither commander brought infantry to the field, making the cavalry the dominant factor by default. Fairly frequently, an initial mounted charge swept the opposing horsemen from the field, causing the defeated side's infantry to panic and flee, thus winning the battle at the outset. Occasionally a battle was decided by the action of a cavalry reserve or enveloping detachment. In one or two cases, cavalry first drove off the opposing horsemen, then combined with its own footmen to defeat the isolated enemy infantry, so that the foot troops earned some credit, though not the main credit, for the victory. The infantry could also make an important contribution by holding attacking knights in check until its own horsemen could win the battle by striking the flank or rear of the opposing cavalry. Sometimes cavalry, operating without infantry

69 Aldo A. Settia, *Rapine, assedi, battaglie. La guerra nel Medioevo* (Rome: Laterza, 2004), 207-08; see also idem, *Battaglie medievali* (Bologna: Il Mulino, 2020), 172: "in assenza [di propri cavalieri, i fanti] devono rassegnarsi alla resa." Oman said much the same in 1898: *History*, 443.

support, engaged with footmen who had no cavalry support—either from the start or because their horsemen had been driven off in an earlier phase of the battle—but nonetheless attempted to resist. Without any exception among the cases examined here, that always, in the end, led to the complete destruction of the infantry force.

Of the 27 battles considered above, there were 20 where cavalry was clearly the principal contributor to victory; 4 more where it probably was, though the sources have so little detail that the conclusion is not indisputable; and 1 that was fought entirely by cavalry, but without a clear victor.[70] Of the remaining 2 cases, we have 1 where an otherwise clear-cut victory won purely by cavalry becomes a little ambiguous because the victorious commander was killed during the pursuit (though I would say this still constitutes a case of a cavalry victory), and 1 that was (depending on whether or not we accept the testimony of a late source) either primarily a cavalry victory, or one where the relative contribution of cavalry and infantry to the outcome cannot be determined.[71] In 5 of the 27 it can be said that common infantrymen earned some portion of the credit for a tactical victory, though not the majority of it.[72] In not one single case can it credibly be asserted that infantrymen were definitely "more important" than the horsemen for the winning side. When cavalry made the larger contribution in every one of the battles for which a definite judgment can be made, and in only 19% of the battles can infantry even be said to have made a substantial minority contribution, the old language of cavalry "dominance" and "supremacy" seems fully justified.

70 Messina, Troina, Olivento, Civitate, Castrogiovanni, Cerami, Catania, Nocera, Rignano, Rome, Spoleto, Palosco, Cassano, Landriano, Tassera, Orsenigo, Cerro, Tusculum, Senio, and Legnano; Montepeloso, Monte Maggiore, Misilmeri, and Monte Turone; and St. Martin of Casetti.

71 Andria; Pelosco.

72 At Palosco, Senio, Legnano, Rudiano and Tassera.

Cavalry and Military Power in Medieval Southern Asia:

Circa 700 CE-Circa 1530

Kaushik Roy

The Ride of the Horse Warriors

From the invasion of the Arab invaders during the eighth century till the coming of the Mughals in the sixteenth century, combat in Southern Asia (South Asia alongside Afghanistan and Tibet) was decided primarily by the horse warriors. From the Arabs of West Asia to the Islamised seminomadic Turks of Central Asia, the number and quality of horses deployed shaped the trajectory of war everywhere in Southern Asia. In fact, war horses determined the rise and fall of empires in the region stretching from Afghanistan in the west till the Bengal-Myanmar border in the east.[1] Among many other things, the intrusion of Islam into Central Asia in the eighth century triggered the ride of horse warriors in the Indian subcontinent's history in a significant manner. Ironically, the rise of an Islamic power (the Ottoman Turks) in West Asia during the fifteenth century indirectly accelerated the long process of decline of cavalry in combat.

In this essay, instead of South Asia, I will use the term Southern Asia because the history of South Asia (India and Pakistan primarily) is inextricably linked with historical developments in neighbouring Afghanistan. The Islamic horse warriors poured into India through the traditional invasion routes which were the hill passes along the northwest frontier of the Indian subcontinent. The bane of medieval India was that the ecology of the country was not suited for breeding of good quality war horses in large numbers. The hot and humid climate of India with heavy monsoon rainfall; intense paddy cultivation along the densely populated fertile river valleys; and absence of wide grasslands were not conducive to large scale breeding of good quality horses. In contrast, the dry arid plateaus of Central Asia with large pasturelands were helpful for large scale breeding of war horses. This explains the repeated defeats of the indigenous Hindu rulers

1 Refer to the table at the end of the chapter.

against the horse nomads of Central Eurasia. The Indian rulers were always dependent on import of war horses from Arabia, Persia, and Central Asia through the overland and the maritime routes. If these supply lines were severed then the medieval Indian rulers were at the mercy of horse riders from Central Eurasia. Let me turn the spotlight to the eighth century, to see how it all started.

The Clash of Heavy Cavalry: Arabs against the Rajputs

Islamic Arab armies started entering the orbit of Southern Asia at the beginning of the eighth century. The caliphs were able to conquer Sind but failed to annex any part of India further east. This was primarily because the Arabs enjoyed no substantial edge in the tools for waging battles. Both the Arabs and their Indian opponents (especially the Rajput warrior aristocracy) for conducting battles depended primarily on similar instrument: heavy cavalry armed with spears and swords capable of making frontal charges.

In 712, the Arab commander Muhammad bin Qasim marched towards Sind. The core of his force comprised 6,000 armoured Syrian and Iraqi cavalry. It was supplemented by 6,000 infantry armed with spears carried on the back of the camels (premodern dragoons) and 3,000 Bactrian camels acting as baggage train. King Dahir of Sind had access to war horses from lower Sind and western Punjab. Iron lamellar armour was known both to the Indians and the Tibetans from the beginning of the Common Era. Dahir's cavalry neutralised Qasim's horsemen. Horses were terribly afraid of elephants. Elephants charged at the maximum speed of 15 miles per hour. In the battlefield, the Arabs deployed mangonels (traction trebuchets) for throwing small stones which repulsed Dahir's elephant charge. Qasim also used naptha throwers to frighten the elephants.[2]

Dahir's army was defeated not due to any significant superiority on the part of the Arab and Syrian cavalry but mainly because of internal dissensions between the Brahmins and the Buddhists in Sind. Buddhist leaders (Buddhism

2 *The History of India as told by its Own Historians*, eds. by H.M. Elliot and John Dawson, (hereafter *HIOH*), 8 vols. 1867-1877, reprint, Low Price Publications, New Delhi 2001, vol. 1, *Chach-Nama*, p. 157; Wendy Doniger, *Winged Stallions and Wicked Mares: Horses in Indian Myth and History*. Speaking Tiger Books, New Delhi 2021, p. 257; Donald J. LaRocca (ed.), *Warriors of the Himalayas: Rediscovering the Arms and Armor of Tibet*. Yale University Press in association with The Metropolitan Museum of Art, New York, New Haven 2006, p. 51; *Politics and Society during the Early Medieval Period: Collected Works of Professor Mohammad Habib*, vol. 2, ed. By K.A. Nizami. People's Publishing House, New Delhi 1981, p. 12.

was then the dominant religion in Sind) did not accept the Brahmin Dahir as the legitimate ruler. Further, the tribes like the Jats and the Meds, who were considered outcastes by the Hindus, were attracted by the theoretical equality inherent in *umma* (community of the believers/Muslims). They joined the banner of Islam against Dahir.[3] The cities of Sind fell to the Arabs because the latter enjoyed a technical edge in the sphere of siege war. The Arabs deployed *manjaniqs* (trebuchets). Each such catapult was manned by 500 men. The trebuchets by throwing heavy stones smashed the fortifications in the various cities (like Debal) of Sind.[4]

However, the Arabs failed to penetrate east of River Indus after conquering Sind. On the border of Sind was Rajputana (Rajasthan) and Punjab which were then under the Rajput Pratiharas (730-1036). The Pratihara Army was able to contain the Arab force from Sind. The Rajput Army of the Pratiharas had heavy cavalry and armoured elephants capable of launching frontal charges. As a point of comparison, the Sasanian Empire's force comprised elephants and heavy cavalry. Both in the Pratihara and the Sasanian (224-651) armies, the core striking branch remained the lance equipped armour covered heavy cavalry. Actually armour clad heavy cavalry armed with lances emerged in India under the Gupta Empire (319-520). Probably the Guptas copied the cataphracts of the Sasanians. At the Battle of the Yarmuk (August 636), the Sasanian force was defeated by the Arabs due to the faulty deployment of heavy cavalry by the Persian commanders and the presence of Arab infantry which drove away the elephants in the Sasanian Army. The Sasanians learnt the use of elephants as a battering ram in the battlefield from the Indians. When the Islamic Arabs initially erupted from Arabia, their force comprised camel borne infantry. As the Arabs after conquering Iraq expanded both in the eastern and the western directions, cavalry acquired the prominent role in their force structure.[5]

The argument that the Arabs from Sind failed to conquer India because they

3 M. Habib, 'The Urban Revolution in Northern India,' in Jos J.L. Gommans and Dirk H.A. Kolff (eds.), *Warfare and Weaponry in South Asia: 1000-1800*. Oxford University Press, New Delhi 2001, pp. 45-65; Manan Ahmed Asif, *A Book of Conquest: The* Chachnama *and Muslim Origins in South Asia*. Harvard University Press, Cambridge, MA 2016, p. 126.

4 Ishwari Prasad, *History of Medieval India: From 647 to 1526 CE*. 1925, reprint, Surjeet Publications, Delhi 2019, pp. 39-42.

5 J.W. Jandora, 'Developments in Islamic Warfare: The Early Conquests' *Studia Islamica*, no. 64 1986, pp. 101-13; Kaushik Roy, *Warfare in Pre-British India: 1500 BCE to 1740 CE*. Routledge, London 2015, p. 57; Kaushik Roy, *A Global History of Pre-Modern Warfare: Before the Rise of the West, 10,000 BCE-1500 CE*. Routledge, London 2022, p. 159.

were not getting aid from the caliphate is erroneous. The Arabs deployed some 50,000 men in Sind for further conquest.[6] For the Pratiharas, the main front was north India where they were fighting the Palas (750-1050) from Bengal and the Rashtrakutas (735-972) of Deccan for controlling Kanauj. For the Pratihara rulers, Sind-Rajputana border was a secondary front. Like the Arabs, for logistical purpose, the Pratiharas maintained camel corps. Camels were bred in Multan. Interbreeding with Bactrian camels improved their breed and such camels were also exported to Khorasan.[7]

The Arab attempt to advance from lower Sind into Gujarat was checked by the Rashtrakutas. About the great military strength of the Rashtrakutas (the Arabs called them Balharas), the Arab book titled *Salsilatu-T Tawarikh* (composed between the ninth and the tenth centuries) notes: 'The Balhara is the most eminent of the princes of India…. He gives regular pay to his troops…. He has many horses and elephants, and immense wealth…. He has great riches, and his camels and horses are numerous.'[8] The Rashtrakutas acquired horses from the Cutch area and Kathiawar in Gujarat and elephants from Malwa in central India.[9]

Mounted Archers of the Ghaznavids

The Arab commanders while fighting in Central Asia realised the sterling qualities of the Turkish horsemen. In speed and stamina, the horses bred in Turkmenistan were better than those of Arabia and Persia. In terms of riding skill, the nomadic Turks were much better than the Arabs and the Persians. The Turkish nomads like the Mongols were born and brought up in the saddle from childhood. They learnt to hunt, eat, and even sleep on horseback. In contrast, horsemen of the sedentary civilisations had to learn the art of riding horses. In terms of horsemanship, the Turkish and Mongolian steppe nomads had no peers in the world. As early as 664, in the reign of Caliph Muawiya, one general Muhallab who was operating in Khorasan confronted the Turkish horsemen. Muhallab asserted: 'How much more active than we those barbarians are.'[10]

6 Gurcharn Singh Sandhu, *A Military History of Ancient India*. Vij Books, New Delhi 2000, p. 411.

7 *HIOH*, vol. 1, Ibn Haukal, Al-Idrisi, pp. 38, 91.

8 Quoted from Early Arab Geographers I., *Salsilatu-T Tawarikh*, in *HIOH*, vol. 1, pp. 3-4.

9 *HIOH*, vol. 1, Al Masudi, pp. 21, Appendix, 358-59.

10 Quoted from Al Biladuri, *HIOH*, vol. 1, pp. 116-17.

The Abbasid Caliphs to corner the Arab and Bedouin soldiers who were loyal to the Umayyads bought young male Turkish slaves from the Central Asian slave merchants in Khorasan. Another reason for buying young Turkish males was the fact that in terms of horsemanship they far exceeded the Bedouins. These slaves became elite military officers. These slaves (*mamluks*) were given education and were trained in riding and horse archery. They became leaders of the caliphate's civil and military government as well as top notch field commanders. Following the model set by the central government, the Abbasid's feudatories and vassal rulers also started implementing the *mamluk* model while structuring their armies.[11]

As the Abbasid Caliphate's central government weakened, its Turkish *ghulam* (*mamluk*) commanders carved out semi-independent principalities. The gradual advance of the Samanids (819-1005) with their capital at Bokhara in Central Asia (Transoxiana and Khorasan), Buyids (934-1062) in Persia, Saffarids (861-1002) in Seistan, and the Ghaznavids (975-1187) in Ghazni prevented the Hindu Shahi rulers of Punjab (822-1026) from access to the horses of Central Asia, Afghanistan, and Persia.[12] The Hindu Shahi Dynasty was forced to depend on the smaller number of horses (which were not as good as the Turkestani and Persian steeds) that were bred in western Punjab along the Shivalik Hills. Even the stocks of horses in this region (along with other parts of India where a small number of war horses were raised) required to be interbred with stallions and mares imported from West and Central Asia. So, the Hindu Shahis were forced to supplement their relatively smaller number of cavalry with elephants which were available in large numbers then in central and eastern Punjab and north India.

The Ghaznavid rulers (they were initially Samanid *ghulams*) mainly depended on unarmoured light cavalry (Turkish horse archers) which was effective for conducting long distance pillage and plunder. The horse archers were Turkish *mamluks* of Central Asia who constituted the regular (permanent) cavalry under direct control of the crown. In addition, Mahmud Ghazni (r. 998-1030) also utilised the volunteer *ghazis* of Transoxiana.[13] They were enlisted during

11 David Ayalon, 'The Military Reforms of Caliph al-Mutasim: Their Background and Consequences,' in David Ayalon, *Islam and the Abode of War: Military Slaves and Islamic Adversaries*. Variorum, Aldershot 1994, pp. 1-39.

12 *Politics and Society during the Early Medieval Period*, pp. 38-9.

13 C.E. Bosworth, *The Ghaznavids: Their Empire in Afghanistan and Eastern India, 994-1040*. 1963, reprint, Munshiram Manoharlal Publishers, New Delhi 1992, p. 33.

a particular campaign and then disbanded in peacetime. The *ghazis* constituted irregular cavalry and served for getting a share of the pillage and plunder. With a force comprising mainly unarmoured horse archers, the Ghaznavid rulers like Sebuktagin and Mahmud Ghazni were able to defeat the ponderous Hindu Shahi Army comprising mainly elephants and second grade cavalry.

Technologically the Turks enjoyed certain advantages. The Rajput horsemen used rope stirrups which were inferior compared to the iron stirrups used by the Turks. The relatively loose and unstable rope stirrups did not provide adequate stability to allow the Rajput riders to use swords or javelins dexterously when the horses were mobile. The iron stirrups gave the Turkish riders better control over their mounts even while the latter were moving. The speed and reach of the Ghaznavid horses were higher compared to the mounts of the Rajputs because the Persians and the Turks knew the art of shoeing the hoofs of the war horses. Initially they used copper shoeing and later iron for horseshoeing. In contrast, the unshod hoofs of the Rajputs' horses were destroyed especially when they were deployed in muddy or stony ground. Then the Rajputs, mounted on the Indian horses, could never match the speed while pursuing the Turkish horse warriors who frequently conducted tactical retreats and then with their composite bows implemented their famous Parthian shots (shooting backwards from galloping horses). Composite bows were handy enough (small and light) to be used on horseback. When not in use such bows could be folded and carried in backpacks. Composite bow was made of a combination of different materials: wood, horn, and sinew. The maximum range of a composite bow was 1,000 yards (effective range 450 yards) and at lesser range an arrow shot from such a bow could bring down a bison. The big Indian simple bamboo bows could not be used by the Rajput warriors from horseback. The bowstrings of the composite bows were made of cowhide. Such bowstrings were better than barks or cane fibre used for bowstrings of the Indian bows. Due to religious taboo, the high caste Rajputs could not use cowhide as bowstrings. The Turkish archers used thumb rings (which the Rajputs lacked) for quick shooting without getting bruises on their fingers. Overall, composite bow's range, accuracy, and rate of fire were several times higher than that of simple bamboo bow used by the Rajputs. Outside the reach of their swords and spears, Turkish horse archers using composite bows picked up the Rajput cavaliers easily. The Turkish horse archers by targeting the *mahouts* (elephant drivers) sitting at the *howdah* (wooden boxes at the back of the elephants) made the war elephants rudderless. The immobile Hindu infantry equipped with big and heavy slow firing bamboo bows were easy targets for the lightly clad nimble Turkish horse archers. For close quarter

combat with armoured Turkish heavy cavalry, the Rajput mounted warriors used heavy straight swords for thrusting. Not only were they quite heavy to use but after one or two thrusts into enemy cavaliers the blades also bent. The Turkish sowars used comparatively lighter and longer *tulwars* (curved swords with razor shaped blades) which could be used repeatedly for slashing.[14] The higher calibre of the Ghaznavid military machine was evident in the defeat of the numerically superior Hindu Shahi Army at the Battle of Waihind (27 November 1001).[15]

Mahmud Ghazni could defeat but not destroy his Indian opponents. The force structure of the Ghaznavids comprising mainly regular and irregular horse archers prevented the Ghaznavids from building up an empire in the sedentary Indian society studded with large forts protected by wide wet and dry ditches and thick high walls made of stones. Horses like *panzers* were good for clearing a region but not for holding it permanently. For the latter purpose, a medieval warlord required disciplined infantry and artillery which the Ghaznavid monarch lacked. Further, for the Ghaznavids, the main front was Oxus along which the Oghuz Turkish tribes posed an existential threat. Mahmud Ghazni led repeated plundering raids against the *infidels* (Hindus) in Hindustan to acquire legitimacy by becoming *ghazi* and to acquire money for maintaining the costly military machine to protect the northern frontier of the Ghaznavid Empire. Mahmud Ghazni led a raid with 30,000 regular cavalry and an equal number of *ghazis* in Gujarat (January 1026) because it had the principal ports through which products of central and west India were exported to West Asia.[16] Al- Biruni mentioned that the soil of Gujarat was very fertile and the climate was excellent. According to him, Gujarat had 80,000 flourishing cities, villages, and hamlets.[17]

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14 A. Jan Qaisar, 'Horseshoeing in Mughal India,' *Indian Journal of History of Science* Vol. 27 no. 2 1992, pp. 133-44; Jos J.L. Gommans and Dirk H.A. Kolff, 'Introduction: Warfare and Weaponry in South Asia: 1000-1800 AD,' and Simon Digby, 'The Problem of the Military Ascendancy of the Delhi Sultanate,' in Gommans and Kolff (eds.), *Warfare and Weaponry in South Asia*, pp. 30-31, 311-20; P.K. Gode, 'The Mounted Bowman on Indian Battle-Fields-From the Invasion of Alexander (BC 326) to the Battle of Panipat (AD 1761),' *Bulletin of the Deccan College Research Institute* Vol. 8 nos. 1-2 1947, p. 34.

15 *The Cambridge History of India* (*CHI*), vol. 3, *Turks and Afghans*, ed. by Wolseley Haig. Macmillan, New York 1928, p. 13.

16 Ali Ahmad Jalali, *Afghanistan: A Military History from the Ancient Empires to the Great Game*. University Press of Kansas, Lawrence, Kansas 2021, pp. 149-51.

17 *HIOH*, vol. 1, Al-Biruni, p. 67; J. Burton-Page, 'A Study of Fortification in the Indian Subcontinent from the Thirteenth to the Eighteenth Century AD,' *Bulletin of the School of Oriental and African Studies* Vol. 23 1960, pp. 508-22.

Combined Arms Tactics of the Ghorids

After the death of Mahmud Ghazni, his weak successors failed against the Seljuq Turks (who were related to the Oghuz tribe). The Seljuqs at the Battle of Dandanqan (10 May 1040), fought in the desert between Sarakhs and Merv, destroyed the Ghaznavid Army. The Ghaznavids lost Khorasan and Khwarazm. The truncated Ghaznavid Empire after Dandanqan was limited to Afghanistan and Western Punjab.[18]

The weakened Ghaznavids failed to cope with the rising power of their vassals, the Ghorids whose capital was Ghor (western Hindu Kush in central Afghanistan). Ghor being a mountainous region, initially the Ghorid rulers raised infantry soldiers. However, to fight the Ghaznavids in Punjab and later for expansion into India, the Ghorid rulers recruited Turks from Central Asia through the *mamluk* institution. The *Mamluk* Sultanate of Egypt (1250-1517) also drew its *mamluk* recruits from the slave boys of Kipchak Turks of Central Asia. These Turks were expert horse archers. The mountains of Ghor were rich in iron deposits and the region had a tradition in manufacturing war materials. Besides the mounts available in Afghanistan, the availability of iron weapons (spears, arrows, and armour for the horses and the riders) enabled Muhammad Ghori (r. 1173-1206) of Ghor to defeat the Ghaznavids and then invade India.[19]

In 1178, Muhammad Ghori invaded Gujarat but was defeated by Vaghela ruler Mularaja II at Patan. The latter deployed large number of elephants (acquired from the jungles of central India), infantry, and cavalry (horses from Kathiawar Peninsula).[20] This force structure was able to check Muhammad Ghori's horse archers.

When Muhammad Ghori made his first attempt to invade north India, he was defeated by Prithviraj Chauhan, the leader of the Rajput Confederacy in the First Battle of Tarain (1191). Prithviraj led a combined force of all the Rajput principalities in north India. The theoretical strength of the Rajput Confederacy

18 C.E. Bosworth, *The Later Ghaznavids: Splendour and Decay, The Dynasty in Afghanistan and Northern India, 1040-1186*. 1977, reprint, Munshiram Manoharlal, New Delhi 1992, p. 6.

19 Satish Chandra, *Medieval India: From the Sultanat to the Mughals, Part One, Delhi Sultanat (1206-1526)*. 1997, reprint, Har-Anand Publications, New Delhi 2004, p. 15; David Ayalon, 'Mamluk: Military Slavery in Egypt and Syria,' in Ayalon, *Islam and the Abode of War*, pp. 1-21; Peter Jackson, 'Turkish Slaves on Islam's Indian Frontier,' in Indrani Chatterjee and Richard M. Eaton (eds.), *Slavery and South Asian History*. Indiana University Press, Bloomington, Indiana 2006, pp. 64-5.

20 *The Tarikh-I-Mubarakshahi by Yahiya Bin Ahmad Bin Abdullah Sirhindi*, tr. into English from Original Persian by K.K. Basu. Oriental Institute, Baroda: 1932, p. 6.

was 110,000 men. Prithviraj brought in battle some 50,000 cavalry and 300 elephants. The Rajput force was divided into three groups: right, left, and centre. The contingent at the centre was led by Prithviraj's brother Govind Rai. Mounted on an elephant, Govind attacked the centre of Ghorid Army and pushed it back. Simultaneously, the left and right of the Rajput Army charged and turned the two flanks of the Ghorid Army. At that critical juncture, Muhammad Ghori who was personally commanding the centre contingent to raise the flagging spirit of his army attempted to exercise frontline command and encouraged his soldiers to stand and fight. Govind threw a javelin at Muhammad who fell from the horse. Muhammad Ghori, seriously wounded, was carried away from the battlefield and the Ghorid Army retreated.[21]

As a result of these defeats in the hands of the Hindu rulers, Muhammad Ghori innovated and introduced combined arms tactical model for making war. Muhammad Ghori blended heavy (armoured horsemen equipped with spears) and light cavalry (unarmoured horse archers) with infantry in his military system. While the horse archers harassed the enemy force by shooting arrows from a distance, the heavy cavalry force by engaging in close quarter combat destroyed the dislocated hostile force. Then, the Ghorid infantry swarmed (*karwah* technique) to disable the Rajput force's elephants. The Hindu Rajputs, and learning from them, the Ghaznavids deployed war elephants. These elephants were covered with armour to protect them from the horse archers. The Ghorid infantry soldiers with light shields made of bullock hide and cotton (these afforded them protection against arrows and javelins thrown by the soldiers sitting on the *howdah*) advanced close to the elephants and then went under these beasts. Then they ripped apart the unprotected bellies of the elephants with *tulwars* and *khanjars* (sharp daggers).[22] This tactical format (horse archers, armoured cavalry, and trained infantry acting in unison) which integrated harassing tactics of the horse warriors with shock tactics of heavy cavalry and close quarter swarming tactics of the infantry enabled Muhammad Ghori to destroy the armies of the Hindu princes and establish an empire comprising Afghanistan, Punjab, and north India.

Then again Hindu ethics further debilitated the military efficiency of the

21 *CHI*, vol. 3, pp. 39-40; *History of the Rise of the Mahomedan Power in India till the Year 612*, tr. from the Original Persian of Mahomed Khan Ferishta by John Briggs, 4 vols. 1829, reprint, Oriental Books, New Delhi 1981, vol. 1, pp. 96-100.

22 *The Kitab-i-yamini, Historical Memoirs of the Amir Sabaktagin and the Sultan Mahmud of Ghazna*, tr. James Reynolds. W.H. Allen, London 1858, pp. 466-67; Bosworth, *The Later Ghaznavids*, p. 116.

Rajputs. The Rajputs considered themselves Kshatriyas and followed the principles of *dharmayuddha* (just war). In accordance with the code of *dharmayuddha*, nocturnal attacks, sudden raids, commando attacks by special forces, cutting off the supplies of the enemy, looting the baggage train, conducting tactical retreats, executing prisoners, and pursuing the retreating enemy force were considered illegal. Treachery, stratagems, and ambushes which were disallowed in the *dharmayuddha* code of conduct constituted the corpus of *kutayuddha* (unjust war). In the Rajput belief system, the Turks being *mlechchas* (unclean barbarians) were following the elements of *kutayuddha*. Such cowardly acts were considered as *papa* (sin) which would result in the warriors going to hell. The Rajputs followed the principles of *dharmayuddha* in the belief that after death they would achieve *viragati* (go to heaven). This sporting and chivalrous attitude of the Rajputs resulted in their repeated defeats.[23]

Following the principles of *dharmayuddha*, Prithviraj did not pursue the defeated Ghorid Army after the First Battle of Tarain. Rather, a chivalrous Prithviraj allowed the wounded Muhammad Ghori to retreat who returned with a bigger and better trained army a year later. Just before the Second Battle of Tarain, Muhammad Ghori led a nocturnal attack on the unsuspecting Rajput camp.

The ration strength of Muhammad Ghori's army in 1192 numbered 120,000 Turks, Tajiks, and Afghan horsemen and infantry. He deployed 62,000 men during his second confrontation with Prithviraj at the Second Battle of Tarain (1192). The horse archers were divided into four groups of 10,000 men each. They harassed the Rajput force from a distance from four directions. Due to the continuous shower of arrows, the Rajput cavalrymen and elephants were pressed inwards and crowded towards the centre. Towards the end of the day, as the Rajput horsemen in heavy armour were tired due to continuous shower of archery from a distance, Ghori launched his 12,000 strong steel clad armoured heavy cavalry in a frontal charge and overthrew the fatigued Rajput host.[24] This tactical formula proved to be war winning instrument for the Ghorid force in the wide-open plains of north India. After his victory at the Second Battle of Tarain, the victorious Muhammad Ghori pursued the defeated Rajput force relentlessly to destroy it completely. As a result, the Rajput Confederacy disintegrated.

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23 B.N.S. Yadava, 'Chivalry and Warfare,' in Gommans and Kolff (eds.), *Warfare and Weaponry in South Asia*, pp. 66-98.

24 *The Tarikh-Mubarakshahi by Yahiya Bin Ahmad Bin Abdullah Sirhindi*, tr. into English from the original Persian with Notes and Index by H. Beveridge. Low Price Publications, Delhi 1996, pp. 8-10; Jadunath Sarkar, *Military History of India*. 1960, reprint, Orient Longmans, Bombay 1970, pp. 33-5.

After the death of Muhammad Ghori, his *mamluks* became the crucial actors in the political and military fields. These *mamluks* were originally slaves who were bought from the Central Asian slave markets. Most of them were refugees escaping the Mongol onslaught. Ghori gave them senior commands and high administrative positions. For maintenance of the military contingents, the *mamluks* were granted *iqtas* (right to collect land revenue) in the newly conquered region in the Ganga-Jamuna doab. Thus, they became the ruling class of the expanding Ghorid Empire. The *mamluks* acted as sultans and sultan makers.[25]

Ghori's principal *mamluk* named Qutub ud din Aibak (r. 1206-1210) founded the Delhi Sultanate. He was followed by another *mamluk* Iltutmish (r. 1211-1236) who established the slave (*mamluk*) dynasty. After Iltutmish's death, a group of 40 *mamluks* became the sultan makers. Ghiyas ud din Balban (r. 1266-1287) after becoming sultan destroyed this group of 40 but otherwise maintained the *mamluk* army. The Mongols advanced till Punjab but luckily did not penetrate further due to the intense heat of India and civil war within the Mongol khanates.[26]

The early sultans of Delhi copied wholesale the *mamluk* system which developed in the Abbasid Caliphate (750-1258) and then in Egypt. The Muslim immigrants escaping the Mongols from eastern Persia, Khorasan, Transoxiana, and Afghanistan came to India and they were recruited as *mamluks* by the Delhi sultans.[27] The strength of the Delhi Sultanate Army under Balban came to about 50,000 cavalry (mostly *mamluk* who were mainly Turks with a sprinkling of Qara Khitai of proto-Mongolian stock and East Africans [Habshis]) and 200,000 infantry (known as *paiks* they were Afghans and Hindus).[28] These *mamluks* who were mostly unarmoured horse archers enabled the fledgling Delhi Sultanate to defeat the Hindu principalities in central and west India. However, against the Mongols, the early Delhi Sultanate's *mamluk* army was unsuccessful. The *mamluk* dynasty was replaced by the Khaljis (1290-1320) who started a military restructuring of the Delhi Sultanate.

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25 Sunil Kumar, 'Service, Status, and Military Slavery in the Delhi Sultanate: Thirteenth and Fourteenth Centuries,' in Chatterjee and Eaton (eds.), *Slavery and South Asian History*, pp. 83-114.

26 Ishwari Prasad, *A Short History of Muslim Rule in India: From the Advent of Islam to the Death of Aurangzeb*. 1936, reprint, Surjeet Publications, Delhi 2014, pp. 56-73.

27 Sunil Kumar, *The Emergence of the Delhi Sultanate*. 2007, reprint, Permanent Black, New Delhi 2015, p. 3.

28 Peter Jackson, 'Sultan Radiyya Bint Iltutmish,' and 'Delhi: The Problem of a Vast Military Encampment,' in Peter Jackson, *Studies on the Mongol Empire and Early Muslim India*. Ashgate, Surrey 2009, pp. 20, 181-97.

Composite Model of War of the Delhi Sultanate

The Delhi Sultanate lost Afghanistan and the Mongols entered western Punjab. At that critical juncture, Alauddin Khalji (r. 1296-1316) entered the scene and introduced a new military structure. Alauddin's reinvigorated Delhi Sultanate Army which I argue followed a composite model of war making was successful not only against the Hindu rulers but went on an offensive against the Mongols.

Alauddin Khalji implemented a composite military format. He integrated the tools of field and siege war with the broader administrative and economic framework of the sultanate. Alauddin understood that a synergistic combination of all these elements was necessary for effective defence of his domain. He constructed new forts and repaired the existing ones along the Indus and its tributaries. Each fort was equipped with trebuchets and a well-equipped garrison was put in these forts. These forts like Samana, Dipalpur, etc. functioned as breakwater against the Mongol invasion force. This chain of forts which lay along the route of the Mongol invasions delayed the advance of the Mongols which enabled Alauddin to mobilise his field army. The Mongol force had to detach a large detachment to screen these forts which weakened their main force that marched into the interiors of India. In case, the Mongol invaders refused to block these forts then the garrisons of these forts conducted hit and run raids against the Mongols' supply lines which stretched back to their rear base in Kabul. Once the weakened Mongol main force entered north India, Alauddin refused battle. Rather, he used his light cavalry to conduct hit and run tactics to cut the supply line of the Mongols. Debilitated by Indian summer heat and lack of forage, when the Mongol force already seriously weakened started withdrawing, Alauddin with his field army attacked them.[29]

To maintain the garrisons in the various forts and for maintaining a big field army, Alauddin increased the size of his army. He maintained 475,000 men. Of them, 200,000 were cavalry (both heavy and light) and the rest were infantry and personnel belonging to the artillery and *pilkhana* (elephant) establishment. The sultan realised that *iqtadars* rarely maintained the requisite number of horses required as per the regulations. Moreover, the contingents of the *iqtadars* were of inferior quality. The *iqtadars* were more interested in pocketing the profits accruing from the *iqtas* granted to them. Further, the large *iqtadars* with their

29 Banarasi Prasad Saxena, 'Alauddin Khalji,' in Mohammad Habib and Khaliq Ahmad Nizami (eds.), *A Comprehensive History of India*, vol. 5, Part 1, *The Delhi Sultanat, AD 1206-1526*. 1970, reprint, People's Publishing House, New Delhi 1996, pp. 326-84.

mamluk establishments not only proved to be disobedient but like the Egyptian *mamluks* often also made a bid for the throne. So, Alauddin replaced the *mamluk* system with a professional mercenary force. He maintained horsemen who were recruited by the central government and paid them in cash regularly out of the central exchequer.[30]

Alauddin sent annual raiding expeditions against the Hindu states of south India to collect plunder for filling up his treasury to meet the demands of his sprawling military establishment. But such raids were not adequate enough. In order to meet the astronomical expenditure required for maintaining such a large military establishment on a permanent footing, Alauddin was forced to introduce economic regulations. Alauddin raised the land revenue demand to 50 per cent of the gross produce of the land. He introduced price regulations which resulted in the emergence of a sort of 'command economy' in the Ganga-Jamuna doab. The sultan's government fixed the prices of essential commodities which prevented inflation and allowed the soldiers to buy goods cheaply required for everyday use from the markets established by the government. The grain traders were under the governmental regulations and forced to bring grain and sell it at designated prices in the government established grain markets. Lastly, Alauddin ordered the government officials to buy large amount of grain annually and to store them in the government warehouses to tide over emergencies such as famine or Mongol invasion. In such critical times, grain was issued freely to the soldiers and the public.[31]

The Chagatai Mongol Khanate of Transoxiana especially under the reign of Alauddin made serious attempts to conquer India. These invasions were bigger in scale, scope and intensity from the previous Mongol raids each of which comprised maximum 20,000 horses geared for making limited conquest in the fringe areas and acquiring booties.[32] Alauddin's comprehensive integration of economic, administrative, and military techniques resulted in the growth of composite military model. This model was successful as the table shows the Delhi Sultan-

30 Kishori Saran Lal, *History of the Khaljis: AD 1290-1320*. 1979, reprint, Munshiram Manoharlal Publishers, New Delhi 2019, pp. 191-97; *Politics and Society during the Early Medieval Period,* p. 269.

31 S. Roy, 'The Khalji Dynasty: Ala-ud-Din Khalji,' in *The History and Culture of the Indian People*, vol. 6, *The Delhi Sultanate*, General Editor R.C. Majumdar, Assistant Editors A.D. Pusalker and A.K. Majumder. 1960, reprint, Bharatiya Vidya Bhavan, Mumbai 2022, pp. 18-51.

32 Peter Jackson, 'Jalal al-Din, the Mongols, and the Khwarazmian Conquest of the Panjab and Sind,' in Jackson, *Studies on the Mongol Empire and Early Muslim India*, pp. 1-20.

ate Army was able to defeat continual large scale Mongol invasions.

Muhammad Tughluq (r. 1325-1351) maintained the military set up of Alauddin. However, his hubris led to nemesis. He pursued the grandiose idea of conquering Central Asia and China. For these two projects, he maintained an army which numbered 600,000 men. To provide for this huge military establishment, he raised the level of taxes in the Ganga-Jamuna doab, and this resulted in large scale rebellions throughout his far-flung empire. Muhammad tried to experiment with paper money (an idea acquired from China) but the Hindu merchants and the coin changers sabotaged his plan. This resulted in further expenditure of the already impoverished central exchequer. Finally, his plan to shift the capital of his empire from Delhi to Devagiri (more centrally located) proved economically ruinous. Just before his death, Muhammad Tughluq due to ongoing economic crisis, had to disband bulk of the army. The central government at Delhi was becoming economically penurious and militarily weak. Worse, the outlying provinces in Deccan were rebelling.[33]

In such dire circumstances, the weak rulers who followed Muhammad Tughluq failed to maintain the composite military establishment. Firuz Tughluq (r. 1351-1388), Muhammad Tughluq's successor, under pressure from the nobility started issuing *iqtas* for paying the civilian and military officers. Worse, the *iqtas* and the government posts became hereditary. Firuz lightened the punishments for disobedience and non-performance of government duties. Instead of a professional army recruited by the central government and paid in cash regularly, Firuz revived the discredited *mamluk* system. After his death, his slaves supported different candidates for the throne. The ensuing civil war further weakened the sultanate economically and militarily. At that critical juncture, Amir Timur arrived in India (1398).[34]

Timur's army was similar to that of the Mongol force. However, the Mongols were defeated by Alauddin. But then why was Timur able to defeat the Delhi Sultanate force at the Battle of Delhi (14 December 1398), some 82 years after Alauddin's death? The disciplined regularly paid professional force which Alauddin had built up no more existed. Sultan Mahmud and his *Wazir* (Prime Minister) Mallu Iqbal hastily raised untrained men lacking discipline to meet the crisis as Timur ravaged Punjab. Timur was victorious because his cavalry

33 R.C. Majumdar, 'Muhammad Bin Tughluq,' in *The History and Culture of the Indian People*, vol. 6, pp. 61-89.

34 Kishori Saran Lal, *Twilight of the Sultanate: A Political, Social and Cultural History of the Sultanate of Delhi from the Invasion of Timur to the Conquest of Babur 1398-1526*. 1979, reprint, Munshiram Manoharlal, New Delhi 1980, pp. 1-5.

heavily outnumbered that of the Delhi Sultanate's army. Since the Delhi Sultanate had lost effective control over Afghanistan, its stock of war horses had been reduced drastically. For this reason, the Delhi Sultanate could not recruit Turkish horse archers.[35] Further, Timur was a better general than Sultan Mahmud and the former's army was a well-knit force comprising veterans unlike the Sultanate Army.

Epilogue: Gunpowder War and the Marginalisation of 'Pale Horsemen' of Death

It was Zahir-ud-din Muhammad Babur (b. 1483-d. 1530), a failed warlord from Central Asia, who sounded the death knell of the primacy of cavalry in Southern Asia. Babur, a Chagatai Turk (in India they were called Mughals) and the ousted ruler of Ferghana, introduced a novel format of war which included gunpowder weapons and horses. In Babur's tactical layout, gunpowder weaponry (matchlocks and field artillery [light cannons and mortars]) held the centre stage with horsemen (horse archers and heavy cavalry) playing a secondary role. This tactical formula enabled Babur to defeat the Delhi Sultanate's ruler Ibrahim Lodhi's (r. 1517-1526) force at the First Battle of Panipat (21 April 1526). Ibrahim Lodhi's army comprised elephants and heavy cavalry. Ibrahim's army was organised like one large phalanx like rectangular mass. Babur had organised his army comprising Afghan and Turkish mercenaries at Panipat into four contingents: right, left, centre, and a reserve. Each of these contingents had their own tactical reserve. Ibrahim launched a frontal attack. Lodhi elephant charge was made mincemeat by the firepower generated by the matchlock men, cannons, and mortars placed at the centre of Babur's army. Then, the horse archers of the right and left contingents by launching the famous *taulqama* (flanking attacks) charge completed the discomfiture of the ill-disciplined Lodhi Army.[36]

Babur met a worthy foe in Rana Sangram Singh (b. 1482-d. 1527) the leader of the Rajputs. Unlike Ibrahim, Sangram Singh was a consummate general and his army unlike the Lodhi Army was a disciplined force. Sangram Singh's army supplemented by levies of some Afghan chiefs comprised steel-clad heavy cavalry. The cavalrymen were armed with sabres and spears. At the Battle of Khanwa (16 March 1527), the repeated frontal charges of the heavy Rajput cavalry were turned back by the fire spewed from Babur's gunpowder weapons in

35 Jeremy Black, *Cavalry: A Global History*. Pen & Sword, Yorkshire 2023, p. 79.

36 *History of the Rise of the Mahomedan Power in India*, vol. 2, pp. 28-9.

combination with horse archery.[37] Babur's victory in the First Battle of Panipat and Khanwa resulted in the establishment of the Mughal Empire in north India.

In both these two battles, Babur arranged his matchlock men, cannons, and mortars within the wagenburg formation. In his memoirs, Babur accepted that he adopted the gunpowder weapons (cannons and mortars made of brass and bronze) from the Rumi (Ottoman Turks) and the *taulqama* charge from the Uzbeks.[38] Babur had learnt the use of *taulqama* charge in the hard way. At the Battle of Sar-i-Pul (1501), the Uzbek leader Shaibani Khan using horse archers turned Babur's flanks and completely defeated the young Chagatai warlord.[39] Wagenburg formation was an age old defensive tactical layout used by the steppe nomads of Eurasia. In the West, John Zizka (b. 1360-d.1424), the Hussite leader first used the wagenburg formation in his battles fought at Bohemia. At the Battle of Chaldiran (23 August 1514), the Ottomans used gunpowder weapons and the wagons which defeated the frontal charge of Persian cavalry. Babur's two Ottoman Turkish mercenaries Ustad Quli and Mustafa Rumi introduced these techniques in his force.

Actually, long before Babur, gunpowder had entered India. The Mongols learnt the use of gunpowder from the Chinese and introduced it in northwest India. From southern China, gunpowder entered eastern India across northern Myanmar. However, both in eastern and northwestern India, the Indian rulers used the black powder comprising charcoal, sulphur, and nitre in constructing pyrotechnic devices like handheld *bans* (rockets) which were designed to be used against hostile cavalry. In fact, at the Battle of Ghaghra (6 May 1529), the Afghans of eastern India used *bans* against Babur's cavalry. Through maritime contacts from West Asia and south China, gunpowder came to Deccan. During the first half of the fifteenth century, the Deccani Sultanates manufactured cannons for defence of their forts.[40]

Credit is due to Babur for using in battles the gunpowder weapons in a creative manner in association with other existing tools of war. Light field artil-

37 *Babur-Nama (Memoirs of Babur)*, tr. From the Original Turki Text of Zahir-ud-din Muhammad Babur by A.S. Beveridge, vol. 2. Reprint, Saeed International, New Delhi 1989, pp. 561-77.

38 *Babur-Nama*, vol. 2, pp. 474-75.

39 Stanley Lane-Poole, *The Emperor Babur*. 1899, reprint, Sunita Publications, Delhi 1988, p. 57; Iqtidar Alam Khan, 'Gunpowder and Empire: Indian Case,' *Social Scientist* Vol. 33, nos. 3-4 2005, pp. 54-65.

40 Iqtidar Alam Khan, 'Early use of Cannon and Musket in India,' in Gommans and Kolff (eds.), *Warfare and Weaponry in South Asia*, pp. 321-36.

lery and matchlocks were the two principal tools which Babur synthesised with horse archers and armoured cavalry, thus generating a new system of warfare. Babur's creative military machine which resulted in the gradual sidelining of cavalry enabled the Mughals to dominate the subcontinent till the early eighteenth century.

Conclusion

Afghanistan was the frontier which separated the Central Asian arid pasturelands sparsely inhabited by the horse nomads from the monsoon fed humid lush river valleys densely packed with paddy cultivators. Afghanistan was the base through which the West Asian and Central Asian invaders had poured into India from the dawn of civilisation in Asia. This trend continued during the medieval period. Throughout the medieval period, we have seen that the course of Indian history was being shaped by the historical process that unfolded in Central Asia and it had ripple effects in Afghanistan. All these developments in turn had a cascading effect on the historical evolution of the Indian subcontinent.

If we compare military developments in medieval Southern Asia with that of Western Europe, one notices two contrasts. One, drilled and disciplined pikemen organised in rectangular formation were able to check the frontal assault of knights in Western Europe. However, pikemen did not emerge in Asia. This was because against the mobile horse archers practicing lethal long-distance archery, the tightly packed pikemen would have been annihilated. For this reason, tightly packed pikemen did not emerge in Asia. But Western Europe which mainly due to ecological factors escaped the extensive onslaught of the horse archers could afford the luxury of developing pikemen. Due to absence of wide grasslands in the region west of Hungary, the steppe nomadic horse archers from south Russia could not enter in strength in central, and in west Europe. Second, the medieval Western European commanders were unwilling to engage in decisive battles because they could hardly afford to lose military manpower.[41] However, as the table below shows decisive big bloody battles were quite common in Southern Asia. This was because of and easy availability of the tools (horses, elephants, camels, and iron) of war. Further, India's huge demographic and agrarian resources enabled the warlords to mobilise large forces quite easily.

41 Dennis E. Showalter, 'Caste, Skill, and Training: The Evolution of Cohesion in European Armies from the Middle Ages to the Sixteenth Century,' *Journal of Military History* Vol. 57 July 1993, pp. 407-30.

If the war chariot was the key military factor in ancient India, the war horse was the principal element in the medieval military context. However, winds of change were already evident by the early sixteenth century. Black powder was entering the Indian scene both through land and sea. If we take a longue duree view, then we can say that the Ghaznavid Empire of Mahmud Ghazni was a *mamluk* oriented cavalry state while Babur established a mercenary army-based gunpowder-cavalry empire.

Table: Great Battles fought in Medieval South Asia

Date	Name of Battle	Strength of the Armies		Casualties	Remarks
27 November 1001	Battle of Waihind	Mahmud Ghazni=15,000 cavalry	Hindu Shahi King Jaipal=12,000 cavalry, 30,000 infantry and 300 elephants	15,000 dead and 15 elephants captured on Hindu Shahi side	Mahmud Ghazni victorious
1191	First Battle of Tarain	Muhammad Ghori=40,000 horse archers	Rajput Confederacy=50,000 heavy cavalry and 300 elephants (including those carrying baggage)	5,000 Ghorid soldiers dead including Mahmud Ghori seriously wounded	Prithviraj Chauhan victorious
1192	Second Battle of Tarain	Muhammad Ghori = 62,000 (40,000 horse archers, 12,000 heavy cavalry, 10,000 infantry)	Prithviraj Chauhan=60,000 cavalry and 20,000 infantry and *mahouts*		Muhammad Ghori victorious
5 February 1298	Battle of Jalandhar	25,000 Mongol cavalry under Kadar		12,000 Mongols killed in action and 8,000 taken prisoner	Delhi Sultanate Army led by Ulugh Khan and Zafar Khan victorious

1299	Battle of Kili	50,000 Mongol cavalry under Qutlugh Khwaja	Delhi Sultanate Army=48,000 (primarily cavalry) and 27 elephants	6,000 Mongols killed. The Sultanate Army lost 2,000 killed including its veteran general Zafar Khan	Qutlugh Khwaja retreated after the battle
1303	Battle of Siri	40,000 Mongol cavalry under Targhi			Alauddin Khalji victorious
30 December 1305	Battle of Amroha	50,000 Mongol cavalry under Ali Beg, Tartaq and Targhi	Malik Kafur, the Delhi Sultanate general commanded 40,000 cavalry	8,000 Mongols including Targhi were killed	Decisive Sultanate victory
1306	Battle of Ravi	60,000 Mongols under Kubak		46,000 Mongol casualties	Malik Kafur commanding the Sultanate Army was victorious
14 December 1398	Battle of Delhi	Timur=92,000 (60,000 heavy cavalry and horse archers)	Delhi Sultanate=10,000 cavalry, 40,000 infantry and 125 elephants		Timur victorious
21 April 1526	First Battle of Panipat	Babur=12,000 cavalry (10,000 horse archers, 2,000 heavy cavalry), and 3,000 gunpowder infantry	Ibrahim Lodhi=30,000 cavalry, 100 elephants (including those carrying baggage) and 10,000 *paiks* (Hindu infantry) including *mahouts*	16,000 Afghans were killed	Babur victorious
16 March 1527	Battle of Khanwa	Babur =20,000 cavalry, and 4,000 gunpowder infantry	Rajputs=40,000 cavalry allied with 10,000 Afghan cavalry	20,000 dead, wounded and prisoners on Rajput side	Babur victorious

Note: Each Mongol cavalryman was accompanied by at least four horses. So, 100,000 horses meant 25,000 cavalry. The Muslim authors deliberately overestimated the size of the Rajput forces and underestimated the strength of their own forces in order to con-

vey martial glory to their patron sultans. By collating different sources, I have reached a mean figure in every case. For reasons of space, only some of the sources are given below.

Source: Lal, *Twilight of the Sultanate*, pp. 17-29; Sarkar, *Military History of India*, pp. 35-7, 45; *CHI*, vol. 3, p. 13; Lal, *History of the Khaljis*, pp. 131-51; Khan, 'Gunpowder and Empire,' p. 59; *Rise of the Mahomedan Power*, vol. 1, pp. 96-8, vol. 2, pp. 28-9; *Babur-Nama*, vol. 2, pp. 474, 562-76; Saxena, 'Alauddin Khalji,' pp. 326-70.

Before Hussars: The Cavalry Hosts of Hungary, Moldavia, and Wallachia Between 1350-1550.

A Comparative Study

Liviu Cîmpeanu[1]

A mounted hussar, with his fancy mustache and exotic garments, charging with saber in hand, is the most iconic image of the Hungarian and Central Europe military of the Premodern Age. However, the Late Medieval origin of these semi-legendary horsemen, and the historical context of their emergence still need to be fully clarified. Thus, without claiming to be a comprehensive work on the military organization of the Hungarian Kingdom from the mid-14th to the mid-16th century, the present paper aims to outline the traditions and innovations of the Hungarian cavalry host during the mentioned period, when the hussars emerged as a distinct elite unit. A survey of the military situation in Moldavia and Wallachia completes the overview of military developments and trends in Central Europe in the Late Middle Ages.

Recent research has convincingly demonstrated that the warfare of the Magyars, who settled the Carpathian Basin during the late 9th century, was preserved in the medieval Kingdom of Hungary up to the late 15th century, when the traditional horse archers were replaced by hussars, also light cavalry but armed with lances, shields, and sabers.[2] The geostrategic location of Hungary in Central Europe, favored cultural transfers, including in the sphere of warfare, from The Holy Roman Empire, the Italian Peninsula and even France. Thus, to impose his apostolic authority on the Magyar chieftains who were still pagan, King Stephen I (r. 997-1038) hired the German knights who accompanied Queen Gisela, his wife, to Hungary as early as the first decades of the 11th century. The Arpadian kings of the following two centuries kept hiring foreign

1 Romanian Academy – Institute of Social Sciences and Humanities Sibiu

2 János B. Szabó, A *középkor magyarországi könnyűlovassága - X-XVI. század* (Budapest: Attraktor Könyvkiadó Kft., 2017), *passim*.

knights, armed and equipped in Western fashion, with swords, lances, shields, mail hauberks, and iron helmets. To increase the numbers of this cataphract cavalry, Andrew II (r. 1205-1235) and Béla IV (r. 1235-1270) granted huge domains to the barons of Hungary, thus providing them the necessary income for the maintenance of large retinues, including men-at-arms. However, the bulk of the military elite, fighting as horse archers, were considered "warriors of the royal castles" (*iobagiones castri*) and later "royal servants" (*servientes regi*). A significant change occurred in the mid-13th century, when, after a period of unrest, the local political elite took over the administration of the royal counties, transforming them into "noble counties". The Hungarian kingship was forced to sanction the new internal political reality of the realm, receiving the pledge of allegiance from the local elites. Of course, the ancient privileges of the nobility were confirmed, with the addition of the right of armed resistance against royal abuses (*ius resistendum*) and the right to use their armed power exclusively for the defense of the realm, being thus exempted from the obligation to accompany the king in his private wars outside the borders. Yet, if the sovereign wanted to wage external wars, he could hire as mercenaries barons at the head of their retinue or nobles from the counties.[3]

One should also mention the "auxiliary peoples" such as the Szeklers, the Petchenegs, the Cumans, and the Alans or Iasians, who also provided lightly equipped mounted archers for the vanguard of the Magyars while the latter were still nomads and for guarding the frontiers of the Hungarian Kingdom between the 11th and 16th centuries. While the Petchenegs, Cumans and Iasians abandoned their old ways of waging war by the second half of the 14th century, as a result of their sedentarization and integration in the political and social structures of the Hungarian Kingdom,[4] the Szeklers kept their military traditions until the Late Middle Ages.[5] Around 1538, the Humanist Antal Verancsics described the Szeklers as a very prolific nation, providing a 30000 light horsemen, without any adornments, still living by the barbaric customs of the Scythians.[6]

3 Pál Engel, *The Realm of St. Stephen. A History of Medieval Hungary, 895-1526*, Translated by Tamás Pálosfalvi, English edition by Andrew Ayton, London-New York: I. B. Tauris Publisher, 2001, 39, 83-85, 91-93, 103-105.

4 András Pálóczi-Horváth, *Petchenegs, Cumans, Iasians. Steppe peoples in medieval Hungary*, Budapest: Corvina Kiadó, 68-85.

5 Nathaly Kálnoky, *The Szekler Nation and Medieval Hungary. Politics, Law and Identity on the Frontier*, London-New York-Oxford-New Delhi-Sydney: Bloomsbery Academic, 2020, *passim* (especially: 21-25).

6 Antonius Wrancius Sibenicensis Dalmata, *Expeditions Solymani in Moldaviam et Transsyl-*

A new age in the military organization of the Hungarian Realm came during the rule of the Angevines in the 14th century. Contrary to the statements of the earlier historiography, King Charles Robert (r. 1301-1342) didn't introduce the baronial military system, which was already a century old, as shown above, but the retinues of the prelates and barons of Hungary began indeed to be called *banderia*, according to the Italian fashion of the age. In the 1320's, the same sovereign created the first knights of the royal household (*milites aulae regiae*) from the ranks of young aristocrats in his retinue to increase the number of heavily armored men-at-arms in his private army. The king also tried to secure the support of his barons by granting them several counties and royal fortresses as *honores*, enjoying their royal revenues as long as the beneficiaries were loyal to the Holy Crown. Although the *honores* were not private domains, these were genuine power bases of the barons, who could and should bring in the royal host their retinues, called *banderia*, but also the nobility of the counties under their jurisdiction. During the reign of Louis the Great (r. 1342-1382), the knights of the royal household were expected to hire Italian-style "lances", military units consisting of one heavily armored horseman armed with a lance and sword and two or three squires and servants who were fighting as mounted archers. Thus, in the second half of the 14th century, the Hungarian king had at his disposal several hundred men-at-arms hired directly or by the knights of the royal household but supported by his treasury.[7]

The Angevin kings of Hungary also called under their banners the militias of the Transylvanian-Saxon towns and seats, like Hermannstadt (Sibiu), Kronstadt (Braşov), Bitritz (Bistriţa), and Klausenburg (Cluj), whose inhabitants were expected to fight on horseback or on foot, according to their material possibilities. These well-armed militias were transformed by the decrees of the Transylvanian Diet in the first half of the 16th century into a semi-permanent force of handgunners on foot, several thousand men strong.[8]

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vaniam libri duo. De Situ Trassylvaniae, Moldaviae et Transalpinae liber tertius, edited by Colomannus Eperjessy, Budapest: K. M. Egyetemi Nyomda, MCMXLIV, 43-44.

7 Attila Bárány, "Nagy Lajos hadserege és hadszervezete", *Világtörténet*, 13 (45), 2, 2023, 1-46; Engel, *The Realm of St. Stephen*, 145-147, 183-186; Martyn Rady, *Nobility, Land and Service in Medieval Hungary*, Houndmills-New York: Palgrave Macmillan, 2000, 146-149.

8 Liviu Cîmpeanu, "*Ad retinendam coronam*. Military organization at the Transylvanian Border in the Late Middle Ages: the Transylvanian-Saxon Militias", *From Medieval Frontiers to Early Modern Borders in Central and South-Eastern Europe*, edited by Florin Ardelean, Liviu Cîmpeanu, Gelu Fodor, Livia Magina, Berlin: Peter Lang, 2022, 143-176; Liviu Cîmpeanu, "The Transylvanian-Saxon University ar War: It's *Trabanten* in John Sigismund Szapolyai´s Campaigns at the North-Western Borders of Transylvania (1561-1567) ", *Acta Mvsei Na-*

Despite all reforms and innovations, in the second half of the 14th century, the host of the Hungarian Kingdom consisted mainly of lightly equipped cavalry archers. Thus, the retainers (*familiares*) of the Hungarian barons hired by the Italian princes and city-states were described by the chroniclers like their Magyar ancestors, who raided Western Europe four centuries earlier: they fought on horseback, armed with bows and arrows, wearing no armor or at most leather protection.[9]

Sigismund of Luxemburg (1386-1437) inherited this rather archaic cavalry host of the Hungarian Kingdom, which was put to the ultimate challenge after the first decade of his rule. In order to enhance the military value of his army, in the 1390', the sovereign also asked his barons to hire Italian-style *lanceas*, each consisting of one man-at-arms and three mounted archers, at the cost of the royal treasury. Outstanding payments were compensated with grants and mortgages of royal estates. Thus, the numbers of the baronial *banderia* could range between 10 and 250 "lances", that is, from 10 men-at-arms and 30 mounted archers to 250 men-at-arms and 750 mounted archers. On average, the royal captains hired 100-150 "lances", the barons 40-60 "lances", and the knights of the royal household, and the sheriffs (*ispánok*) of the counties 20-25 "lances". The monthly wages of these military units were between 10-20 florins each, out of which a man-at-arms received 7 Florins, and a mounted archer received only 3 Florins.[10]

In 1396 was the great Hungarian-Ottoman showdown at Nicopolis: King Sigismund managed to mobilize the troops of his royal household, the *banderia* of his prelates and barons, and a part of the county nobility, those nobles who could afford a good warhorse and western-style armor and weapons. The historians estimated the Hungarian cavalry host at 10000 strong, of which at least 1/3 were

pocensis, 58, II. Historica, 2021, 11-28 (especially: 12-16).

9 Katalin Prajda, "Subjects of the Kingdom of Hungary, Croatia, and Slavonia as Mercenaries in Fourteenth-Century Italy: Social and Cultural Dimensions", *Annali dell'Instituto storico italo-germanico in Trento*, 49, 1, 2023, 25-48 (especially: 29-32); Adinel C. Dincă, "Hungarian Mercenaries Serving the Pontifical State. A Vatican Source from 1362 and the Beginning of a Discussion", *Italia ed Europa centroorientale tra Medioevo ed Età moderna. Economia, Società, Cultura*, edited by Andrea Fara, Heidelberg: Heidelberg University Publishing 2022 (OnlineSchriften des DHI Rom. Neue Reihe | Pubblicazioni online del DHI Roma. Nuova serie, vol. 7), pp. 43–54 (especially: 48-49) (https://doi.org/10.17885/heiup.832.c13879).

10 Attila Bárány, "King Sigismund of Luxemburg and the preparations for the Hungarian crusading host of Nicopolis (1389-1396)", *Partir en croisade à la fin du Moyen Âge. Financement et logistique*, edited by Daniel Baloup and Manuel Sánchez Martinez, Toulouse: Presses universitaites du Midi, 2015, 153-178 (especially: 157-161, 165-166).

men-at-arms, joined by another 3000 English, French, Burgundian, German and Polish knights and squires, including some infantry. However, this sizable crusader army was literally overwhelmed by the manpower of the evergrowing Ottoman Empire.[11] The defeat of Nicopolis was a valuable lesson for Sigismund of Luxemburg, who realized that he needed not only better troops but also more men to resist the Ottoman onslaught.[12]

In the autumn of 1397, when a retaliation campaign of the Ottomans seemed inevitable, King Sigismund summoned the Hungarian Diet in Timişoara to settle the defense and other internal matters of the realm. However, only Article VI of the Dietal Decree is relevant to the present paper, stipulating the military obligations of the nobility. First and foremost, King Sigismund confirmed the ancient privileges of the Hungarian nobles not to join his external military campaigns without receiving wages from the royal treasury. It was instead their primary obligation to attend in person the general levy for the defense of the realm, barons at the head of their retinues, and petty nobles without tenant peasants alike. Only the ill were exempted from joining a defensive war, but still they had to send their armed men, if they had any, under the royal banner. Deserters and those reluctant to obey the mobilization orders were fined one golden Florin for each tenant peasant and those without tenant peasants with three marks (weight unit) of denars. The novelty consisted in a new obligation for all the landowners to arm a *pharetrarium* for every twenty tenant peasant plots.[13] According to later data, *pharetrarii* was a term for the mounted archers, but their social origin is still debated: while earlier historiography wanted to see in the *militia portalis* instituted by Sigismund a genuine a semi-permanent peasant army, recent research has revealed the fact that the twenty tenant peasant plots mentioned in the Dietal Decree of 1397 were only a quota imposed on the nobility for the recruitment of horse archers, who could be noble retainers, but also peasants in arms (which was a much cheaper solution).[14] This interpretation is supported all the more by the fact that the sovereign ordered a general census of the landowners

11 Tamás Pálosfalvi, *From Nicopolis to Mohács. A History of Ottoman-Hungarian Warfare, 1389-1526*, Leiden-Boston: Brill, 2018, 55-65; Elemér Mályusz, *Kaiser Sigismund in Ungarn, 13871437*, Budapest: Akadémiai Kiadó, 1990, 132-135.

12 Bárány, "King Sigismund of Luxemburg", 177-178.

13 *Decreta regni mediaevalis Hungariae*/*The Laws of the Medieval Kingdom of Hungary*, vol. II. 1301-1457, edited by János M. Bak, Pál Engel, James Ross Sweeney, Paul B. Harvey Jr., Salt Lake City: Charles Schlacks Jr. Publisher, 1992, 22.

14 Mályusz, *Kaiser Sigismund*, 136; Rady, *Nobility, Land and Service*, 150; Bárány, "King Sigismund of Luxemburg", 177; Pálosfalvi, *From Nicopolis to Mohács*, 21-22.

of each county, but unfortunately only the one in drafted in the county of Ung survived.[15]

In the second decade of the 15th century, after King Sigismund founded the knightly Order of the Dragon against the Turks, the southern marcher lords of Hungary, prelates and barons alike, could field several hundred "lances" , supported by the royal treasury through a payment called *dispositio*. Thus, documentary data reveal the fact the voivode of Transylvania hired 225 "lances", the bishop of Transylvania hired 150 "lances", the *ispán* of the Szekler hired 125 "lances", the son of the palatine and the royal captain of the border fort Orşova hired 250 "lances" each, while the count of Timiş hired 1200 "lances".[16]

Whether the *militia portalis* was mustered or not remains an open question. A documentary source I recently discovered in the Archive of the Teutonic Order, kept today in the Secret State Archive of Prussian Cultural Heritage in Berlin-Dahlem, might suggest a positive answer to this question. On 7 April 1427, Nikolaus von Redwicz, ambassador of the Teutonic Order to Hungary, wrote to Grandmaster Paul von Russdorf that in the previous month, he joined King Sigismund's military campaign to support Voivode Dan II, his vassal, on the Wallachian against Radu II Praznaglava, a vassal of Sultan Murad II. According to this report, the Hungarian host that fought in Wallachia consisted of 4000 "townsfolk and peasants" and 600 cavalry (*IIII M burgern vnd gebawern vnd VI C gereyssig*).[17] These "townsfolk and peasants" might be the *militia portalis*, but the source does not attest them as mounted archers or as cavalry, at all. Instead it seems that this was not the case because Nikolaus von Redwicz lists separately the 600 cavalry, which were undoubtedly members of the royal retinue.

Much better documented is the general levy order by Sigismund of Luxemburg to recover the fortress of Golubac from the Turks in 1428. The royal host was joined by the most office holders of Hungary (except the voivode of Transylvania), by many barons, by nobles from all counties of the realm, including the districts of the Cumans and Iasians, and by the Wallachian and Serbian vassals. Even though the army mustered by King Sigismund was seemingly greater in numbers than the one which fought at Nicopolis, being equipped with modern

15 Engel, *The Realm of St. Stephen*, 205.

16 Mályusz, *Kaiser Sigismund*, 145; for the *dispositio* see Pálosfalvi, *From Nicopolis to Mohács*, 21.

17 Geheimes Staatsarchiv Preussischer Kulturbesitz – Berlin, Ordensbriefarchiv, Nr. 4741; published in Liviu Cîmpeanu, "Dan al II-lea, Sigismund de Luxemburg şi cruciada târzie. Un document inedit din arhiva Ordinului Teutonic", *Studii şi materiale de istorie medie*, XXX, 2012, 55-76 (especially: 74).

bombards and joined by war vessels on the Danube, it could not retake Golubac nor could it match the Ottoman relief force, which doesn't even appear to have been commanded by the sultan. However, no Hungarian-Ottoman confrontation occurred, except for a skirmish between some Turks and the Wallachian rearguard. The only result of this campaign was a truce between Sigismund of Luxemburg and Murad II[18].

The king of Hungary could not be satisfied by the performance of his army, which is why he initiated new military reforms in the following years. As early as 1432/1433, King Sigismund proposed to the Estates of Hungary a set of „means and methods of defending the whole Kingdom of Hungary from all enemies attacking that kingdom from any direction". Thus, the general levy of nobles, "many of them hindered by poverty, age, or other weaknesses, appear more on crutches rather than with arms, more like beggars than warriors", should have been replaced by a fixed number of mounted archers from all counties of the realm, by their economic capacity depending on the number on tenant peasant plots of each landowner. The mounted archers, well equipped for war, should have been serving under the sheriffs (*ispánok*) of their counties not only for two weeks, as was the custom of the realm, but as long as needed to repel the enemy attacks. They also should have arrived on time at the gathering place of the royal host and were supposed not to disband without the permission of their captains. Abuses against the civil population on their marching route were strictly forbidden, likewise for the royal troops and the *banderia* of the prelates and barons. All these troops should have received fair wages from their bannerlords and the royal treasury for the entire campaign. Since the Hungarian Kingdom was threatened to the north by the Bohemian Hussites and in the south by the Bosnians and by the Ottomans, the sovereign drew up a long list of cavalry contingents, "lances", and banderia that the prelates, barons, and counties of the realm should deploy on the mentioned three fronts. For instance, „towards Transylvania", the bishop was expected to raise one *banderium*, the voivode and the *ispán* of the Szekelys two *banderia* each; their forces should have been joined by the voivode of Moldavia with all his might, and by the ten neighboring counties which should have muster from 50 to 600 horsemen each (Bihor 600, Sătmar 200, Maramureş 50, Ugocsa 100, Middle- and Exterior Szolnoc 400, Békés 200, Szabolcs 100, Bereg 100, Crasna 100). The Transylvanian-Saxons and the Szekelys should have mustered 4000 men, while the seven counties of

18 The events are thoroughly reconstructed, on documentary basis, in Pálosfalvi, *From Nicopolis to Mohács*, 70-76; for the Ottoman attack on the Wallachian rearguard see also Cîmpeanu, "Dan al II-lea", 70-71.

Transylvania were expected to have only 300 nobles on horseback[19].

According to the royal Decree, these propositions were sent in written form to all Estates of Hungary, yet concrete measures for a military reform were taken only during the Diet of Pozsony on 12 March 1435. According to the Decree issued on that date, the king and his nobles agreed that if the royal troops hired at the expense of the treasury and the *banderia* hired by the marcher lords couldn't repel an enemy attack „on either side" of the realm (albeit the document refers only to the Bohemian Hussites), the general levy could and should be proclaimed. In that case, not only the prelates and barons should take up arms, but all the nobles of the kingdom, serving as retainers in the *banderia* of the former or direct under the command of the sheriffs (*ispánok*) of their counties. In addition to the personal participation of the landowners in the royal host, it was also stipulated that they should arm a horseman, equipped for war at least with bow, quiver, sword, and dagger, for every 33 tenant peasant plots, that is three mounted archers for every 100 tenant peasant plots. The nobles holding fewer than 33 tenant peasant plots "must jointly count their tenants with other tenant peasants, so that for every thirty-three tenant peasants they always sent one mounted archer, armed and prepared in the abovementioned manner, to the general levy," The petty nobles without peasants were expected „to go to war in person." The prelates, barons and nobles were obliged to bear the cost of the general levy; thus billeting, plundering and other abuses were strictly forbidden. In summertime, the host could not quarter in villages and on sown lands, and all resources they needed had to be paid for at fair prices, except uncut grass, wood, and water. All the abuses were to be judged by the captains and the royal officers to give complete satisfaction to the wronged and damaged party[20].

The military reforms at the end of Sigismund's reign remained in practice for the following decades, as illustrated by subsequent historical events and the dietary decrees of the second half of the 15th century. For instance, in 1448, in order to avenge the defeat of the crusader army at Varna four years earlier[21], the Transylvanian warlord John Hunyadi, elected as lord governor of Hungary (r. 1446-1453), started an all-out war against Sultan Murad II, "not be won, but to be finished," as the former wrote to Pope Nicholas V, right before the cam-

19 *Decreta*, II, 141-153 (the case of Transylvania: 151).

20 *Ibid.*, 77-80.

21 Pálosfalvi, *From Nicopolis to Mohács*, 120-141; John Jefferson, *The Holy Wars of King Wladislas and Sultan Murad. The Ottoman-Christian Conflict from 1438-1444*, Leiden-Boston: Brill, 2012, *passim*.

Hungarian „lances" fighting the infidels, cca. 1400 (note the heavily armored lancers, mixed with the mounted archers, far left). This mural painting from the (today) Calvin Reformed Church of Biborţeni, Covasna county, Romania, painted in the early 15th century, represents the fight of the Holy King Ladislaus against the Cumans in the late 11th centry, but it depicts actually the military realities from the Age of King Sigismund (1387-1437). Source: private collection Liviu Cîmpeanu.

paign[22]. On 11 September 1448, the Raguzan diplomat and spy Pasqale de Sorgo wrote to the Sicilian knight Nicolao Ansalone about John Hunyadi's camp he saw on the banks of the Danube: 34.000 Hungarian cavalry, 15.000 heavy infantry, another 8000 cavalry "levied from many and diverse regions of Hungary," 3000 Moldavian cavalry, 4000 Wallachian archers, and some [8000!] crusaders and volunteers, "this brought the total number of men in the army up to 72.000. There were also plenty of handguns and cannons, as well as a Hussite-type *wagenburg*. There were also rumours about a great royal office holder who presumably also brought 5000 cavalry and 4000 infantry, as well as another 3000

22 Magyar Nemzeti Országos Levéltára (MNL. OL), Diplomatikai Fényképgyűjtemény (DF), 286311, f. 25 r. – f. 26 v./ Johannes Vitéz de Zredna, *Opera quae supersunt*, edited by Iván Boronkai, Budapest: Akadémiai Kiadó, 1980, 92.

cavalry and 2000 infantry from Poland.[23] Of course, the number indicated by the Ragusan are exaggerated, but the prevalence of cavalry over infantry can be noted, with an approximate ratio of 2:1.

The first group of cavalry, consisting of 30000 (sic!) horsemen, can be easily identified with the *banderia* of the nine royal office holders and barons and with the other nobles and knights from the counties of Hungary, attested by the chronicler Johannes de Thurocz in the late 15th century[24]. The barons brought under their banners noble retainers and *lanceas*, consisting of men-at-arms and mounted archers (in a ratio of 1:3)[25], and even the petty nobles from the counties did their best to answer the call to arms of John Hunyadi: for instance, a certain Mayus of *Gereecz* mortgaged his small property to a wealthier noble neighbor for an iron helmet, a breastplate, iron gloves, lances, and other weapons, in the valor of 100 gold Florins, weapons, and equipment that he needed for the coming fight against the „wicked infidels."[26] Another petty noble, Péter Berekszói is depicted with a similar equipment on his coat-of-arms granted by John Hunyadi through a diploma issued on 15 February 1448. The beneficiary is represented armed with a sword and equipped in a mail hauberk, a leather or padded fabric coif, and a kettle hat.[27]

As for the second cavalry group mentioned by Pasuqle de Sorgo, the 8000 (sic!) horseman levied from all over Hungary seem to be the *militia portalis* because he also notes that "the people of Hungary furnish [them] with pay and provisions; for instance, as fifty hearts or the equivalent [number of] households bestow one man, provided with weapons, to the army, as per the custom of the king's majesty."[28] Thus, it seems that for this particular campaign, one mounted archer was materially supported by 50 tenant peasant plots. Although, according to King Sigismund's decrees, the *militia portalis* could have been mustered only for defensive campaigns, in 1448, it joined Hunyadi's host outside the borders of the realm. At this stage, it is impossible to state if these mounted archers received wages from the royal treasury, like the *banderia* of the barons or the

23 Mark Whelan, "Pasquale de Sorgo and the Second Battle of Kossovo (1448): A Translation", *Slavonic and East European Review*, 94, 1, 2016, 138 (Latin), 141 (English).

24 Johannes de Thurocz, *Chronica Hungarorum*, vol. I, edited by Elisabeth Galántai, Julius Kistó, Budapest: Akadémiai Kiadó, 1985, 256.

25 Pálosfalvi, *From Nicopolis to Mohács*, 149-150.

26 Magyar Nemzeti Országos Levéltára (MNL. OL.), Diplomatikai Levéltár (DL) 65896.

27 MNL. OL, DF 254918/ Anton Avar, *A Hunyadiak címereslevelei 1447-1489*, Budapest: Magyar Nemzeti Levéltár Országos Levéltára, 2018, 31-35, nr. II.

28 Whelan, "Pasquale de Sorgo", 138 (Latin), 142 (English).

noble levies of the counties, or if they were indeed supported only by "the people of Hungary".

The heavy infantry attested by the Ragusan diplomat can be identified only with the Bohemian Hussite mercenaries who manned the war wagons, attested in the services of John Hunyadi as early as 1442.[29] Finally, the contingents from Moldavia and Wallachia were made up of light cavalry, even the Wallachian archers were on horseback, as we will see further below.

In regards to the ratio between heavy and light cavalry, one can state that the heavily armored men-at-arms made up at least half of the cavalry effective since the Ottomans were stunned by "the dark blue steel" in which the "unbelievers" were clad[30]. Despite its technical superiority, the Hungarian host was again overwhelmed by the manpower Ottomans in a prolonged three-day battle at Kossovo Polje, 18-20 October 1448[31]. However, the brunt of the war was borne by the lord governor's men-at-arms (*armigeri*), who were eventually exhausted by the weight of their weapons and equipment, by the long duration of the battle, and by the wounds they received, according to the letter issued by John Hunyadi himself[32].

The military preparations for the ill-fated campaign at Kossovo Polje perfectly illustrate the state of the Hungarian cavalry host by the mid-15th century. Major military reforms were yet to come during the long reign of Matthias Corvinus (r. 1458-1490). In the Diet at Szeged, on 5 January 1459, the king agreed with his prelates, barons, and nobles that all of them "must go to war as they did in the time of the late king Sigismund." Thus, besides noble retainers and "lances" of their *banderia*, supported by the royal treasury, they "must go to war […] with one well-armed mounted soldier, equipped with sword, shield, quiver, and bow or lance, for every twenty tenant peasants who pay rent to their lord". Lesser nobles were obliged to arm and equip a mounted archer for every ten tenant peasant plots, and those with under ten tenant peasant plots "shall be enumerat-

29 Liviu Cîmpeanu, Claudiu-Ion Neagoe, "Iancu de Hunedoara versus Şehâbeddîn. Un bilanţ al izvoarelor/Jean Hunyadi versus Şehabeddin. Un bilan des sources", *Istros*, XXVIII (2022), 305-376 (especially: 324-325/357-359).

30 Friedrich Giese, *Die altosmanischen anonymen Chroniken in Text und Übersetzung*, Teil II. *Übersetzung*, Leipzig: In Kommission bei F. A. Brockhaus, 1925, 96.

31 Pálosfalvi, *From Nicopolis to Mohács*, 159-166; Emanuel Antoche, "Hunyadi's Campaign of 1448 and the Second Battle of Kosovo Polje (October 17-20)", *Reconfiguring the Fifteenth-Century Crusade*, edited by Norman Housley, London: Palgrave Macmillan, 2017, 245-284.

32 MOL. OL, DF 286311, f. 28 r. – f. 29. r./Vitéz, *Opera*, p. 98.

ed with the tenant peasants of others up to the twenty." The petty nobles without tenant peasants had to go to war in person. Special enumerators from the ranks of the local nobility were appointed by the king in order to conduct a census of the tenant peasant plots in every county of the realm, copies of the lists drawn up had to be handed over both to the commanders of the county militia (the sheriffs [*ispánok*] and their deputies) and the king. The noble enumerators and retainers serving at the castles and residencies of prelates and barons, as well as old, sick, disabled, widows, and orphans were exempted from going to war, but their tenants were also counted. The king could muster this host only for defensive purposes, especially in the case of an enemy attack on the fortress of Belgrade (the Ottoman siege of 1456 was still fresh in the collective memory!). If these forces could not repel the foreign attack, the general levy of all valid members of the nobility could be called in. All prelates, barons, nobles, and militiamen were obliged to appear at the gathering place of the royal host in 25 days after receiving the moblilization order, and they had to remain on duty for three months. Since they were expected to serve at their own expense, being partially supported also by the royal treasury, they had to buy all the resources they needed at fair prices. Thus, plundering and abusive billeting were strictly forbidden and punished. Deserters and reluctants towards the mobilization orders, as well as the ones who were trying to corrupt the enumerators of the tenant peasant plots, were considered traitors and severely punished with the loss of their wealth and life[33].

By 1471, the prelates and barons of Hungary rebelled against Matthias Corvinus, whom they accused of wasting the kingdom's material and human resources on a sterile war in Bohemia, won anyway by the Polish Jagiellons. The king hurried back from the front and summoned a Diet at Buda, where he confirmed the ancient privileges of the nobility and promised not to levy any new taxes to finance his wars without the consent of the Hungarian nobility.[34] Among other things, King Matthias pledged that in what concerns the "military service and mobilization of the banderia of the prelates and our barons and that of the general levy od the gentlemen of the realm, the same procedure shall be observed as that in the time of the late lord King Sigismund; and if any suffer damage in their proprieties, they shall have action at law in accordance with the exigences of their property." Of course, plundering and abusive billeting were

33 *Decreta regni mediaevalis Hungariae*/*The Laws of the Medieval Kingdom of Hungary*, vol. III. 1458-1490, edited by János M. Bak, Leslie S. Domonkos, Paul B. Harvey Jr., in collaboration with Kathleen E. Garay, Los Angeles: Charles Schlacks Jr. Publisher, 1996, 9-14.

34 András Kubinyi, *Matthias Rex*, Budapest: Balassi Kiadó, 2008, 90-93.

prohibited, too.[35]

In fact, after 1471, Matthias Corvinus mustered the *banderia* of the prelates and barons and the general levy of the nobles only partially, and the *militia portalis* not at all, because he increasingly relied on his famous mercenary army.[36] Almost a decade earlier, in 1462, King Matthias hired the rebel army of Jan Giskra, that previously controlled Upper Hungary (today Slovakia). In the following three decades, the sovereign steadily increased the contingents of his private army with new contingents of Germans, Bohemians, and Poles.[37] Despite the statements of the earlier historiography and the common belief, Matthias Corvinus' mercenary army consisted not only of heavily armored men-at-arms but the bulk were lightly armored mounted crossbowmen and Serbian hussars, as we shall see further below, accompanied by some Hussite-style infantry.[38]

On 10 March 1481, the king himself stated about his mercenary army that consisted of men-at-arms (*armigeri*), receiving a wage of 15 gold Florins for three months, light horsemen „called hussars" (*equitum levis armature, quos hussarones appellamus*), receiving a wage of 10 gold Florins for three months, and infantry, with light or heavy equipment and pavises (*pedites* [...] *diversis ordinibus distincti, horum enim alii gregari sunt, alii armigeri, nonnuli clipeati*), receiving a wage of 8 gold Florins for three months.[39] The royal chronicler Antonio Bonfini described as an eyewitness the military parade organized by Matthias Corvinus at Wiener Neustadt in 1487, after his decisive victory over Emperor Frederick III of Habsburg. According to the Italian humanist, in front of the imperial residence marched 28000 men on horseback and on foot, Hussi-

35 *Decreta*, III, 24-25.

36 András Kubinyi, "Probleme bei der Mobilisierung und Logistik unter Matthias", András Kubinyi, *Matthias Corvinus. Die Regierung eines Königreichs in Ostmitteleuropa 1458-1490*, Herne: Tibor Schäfer Verlag, 1999, 162-163.

37 János B. Szabó, "Black Army of Hungary", *The Oxford Encyclopedia of and Military Medieval Warfare Technology*, edited by Clifford J. Rogers, I. *Aachen, Siege of – Dyrrachium, Siege and Battle of (1081)*, 2010, 151–153; Tamás Pálosfalvi, "Matthias' Army", *Matthias Corvinus, the King. Tradition and Renewal in the Hungarian Royal Court,* Budapest, 2008, 295–297; Gyula Rázsó, "The Mercenary Army of King Matthias Corvinus", *From Hunyadi to Rákóczi: War and Society in Late Medieval and Early Modern Hungary*, edited by János M. Bak, Béla Király, New York: Brooklin Colege Press, 1982, 125–143; Gyula Rázsó, "Die Feldzüge des Königs Matthias Corvinus in Niederösterreich 1477–1490", *Militärhistorische Schriftenreihe*, XXIV, 1973, 7–8.

38 Pálosfalvi, *From Nicopolis to Mohács*, 28-39.

39 *Mátyás király levelei. Külügyi osztály*, vol. II, edited by Vilmos Franknói, Budapest: Kiadja a Magyar Tudományos Akadémia, 1895, 107.

te-type war wagons, artillery pieces and mechanical siege engines. The cavalry effective reached 20000, two regiments of men-at-arms at the center and two regiments of hussars on the flanks. Unfortunately, Bonfini did not reveal the proportion between heavy and light cavalry, which may be estimated in the tradition of the Hungarian army of at least 1:3. Still, he recorded that all the mounted fighters were divided into 80 squadrons, presumably of 250 horsemen each. The chronicler records that every man-at-arms and every hussar had banners attached to their lances, every squadron had its distinct banner, and each regiment had its flag. All in all, cavalry prevailed over the infantry with a ratio of 2:1; thus one can state that the host of Matthias Corvinus consisted mainly of horsemen.[40]

By the late 15th century, the Hungarian sovereign could theoretically muster four armies: his private mercenary army, the *banderia* of the prelates and barons, the general levy of the nobles, and the *militia portalis*. Practically, he waged his external wars almost exclusively with his mercenaries, while the barons were assigned to defend the southern borders. The noble levy lost its former importance, and there are no data on the actual mobilization of the *militia portalis*.[41]

After King Matthias's death, his entire Central European polity crumbled, depriving the mercenary army of the needed economic support. Without wages, the mercenaries disbanded, and the remains of their army, named only at this stage "The Black Army" after its captain Johann von Haugwitz "the Black", were detached from Central Europe to the southern border of Hungary to ensure the defense against the Ottomans. After a rebellion staged because of the overdue wages, the last detachments of the "Black Army" were routed by the private army of a local Hungarian marcherlord[42].

King Wladislas Jagiello (r. 1490-1516) was recognized by the prelates, barons, and nobles of Hungary only after he solemnly vowed not to raise extraordinary taxes for the support of the mercenary army of late Matthias Corvinus, and thus to prevent the drain of the kingdom's resources into foreign wars[43]. Through the Dietal Decree of 2 February 1492, the new monarch of Hungary engaged to ensure the defense of his realm with his retainers and mercenaries

40 Antonius de Bonfinis, *Rerum Ungaricarum Decades*, tomus IV – pars I. *Decades IV et dimidia V*, edited by I. Fógel, B. Iványi, L. Juhász, Budapest: K. M. Egyetemi Nyomda, MCMXLI, 152-154.

41 Rázsó, "The Mercenary Army of King Matthias Corvinus", 126-127.

42 Pálosfalvi, *From Nicopolis to Mohács*, 38-39, 290-291.

43 András Kubinyi, "The Road to Defeat: Hungarian Politics and Defense in the Jagiellonian Period", *From Hunyadi to Rákóczi*, 160-161.

paid exclusively by the royal treasury. Only if these troops failed to repel an enemy attack, and exclusively in a defensive war, the king could call to arms the *banderia* of the prelates and barons, the noble levy, and even the almost forgotten *militia portalis*. According to the same document, the *banderia* should be made of 200 men-at-arms and another 200 hussars. "The other barons who do not have *banderia* shall campaign according to their dignity and means and the number of their tenant peasants." Thus, for each 20 tenant peasant plots, the great nobles should have armed a mounted archer, while the lesser nobility should have sent to war for each 10 tenant peasant plots "one horseman […] with at least a lance, shield, hand-bow, and, if possible, even a coat of mail". Again, plundering and abusive billeting were prohibited[44].

Notwithstanding his oath, already in 1493, Wladislas II imposed a new extraordinary tax (*subsidium*) of one gold Florin for each tenant peasant plot "for the defense of the realm." This time, the king was backed by the prelates and barons of Hungary, whose *banderia* were also to be financed by the collected money. Following this pattern, new extraordinary taxes were also imposed in the following years[45].

A new Dietal Decree was issued on 2 June 1498, according to which the king had to for his royal *banderium* of 1000 men-at-arms (*equites armati*) and the separate *banderia* of the voivode of Transylvania, the *ispán* of the Szeklers, the *ban* of Croatia and the sheriff (*ispán*) of Timiş, a total effective o 1600 horsemen. The prelates and barons of the realm were obliged not only to hire men-at-arms (*equites armati*) exclusively in their *banderia* but also to muster well-armed horseman for every 36 tenant peasant plots, excepting the southern counties where for every 24 tenant peasant plots they "have to raise one hussar with an oblong shield, lance, armor, and steel or leather helmet." There were drafted even a list of 27 prelates and high clergymen, as well as a list of 42 hereditary counts, officeholders, and barons who were expected to bring their *banderia* and *militia portalis* under the royal flag. Being supported by the royal treasury (on the basis of extraordinary taxes), the contingents of the prelates and barons were expected to join the royal host in external campaigns but only for defensive purposes. King Wladislas II could also proclaim the general levy of

44 *Decreta regni mediaevalis Hungariae*/*The Laws of the Medieval Kingdom of Hungary*, vol. IV. 1490-1526. From the manuscript/E copiis manu scriptis Ferenc Döry, edited and translated by Pétér Banyó, Martyn Rady, János M. Bak, Idyllwild CA: Charles Schlacks Jr. Publisher, 2010, 10-14.

45 Kubinyi, "The Road to Defeat", 161-162.

the nobles, but these were not obliged to campaign beyond the borders of the realm.[46] As rightly stated, "the decree of 1498 thus effectively put the kingdom's defense on the hands of the great lords".[47]

The course of events over the next two decades demonstrates indeed that the quasi-permanent *kleinkrieg* on the Hungarian-Ottoman frontier was waged by the private cavalry contingents of the prelates and barons who were assigned to defend the southern marches of the realm.[48]

During the Jagiellonian Age, there was only one other general mobilization of the Hungarian Kingdom, namely in 1526, when Louis II (r. 1516-1526) tried to hold the advance of the formidable Ottoman army of Suleyman the Magnificent (r. 1520-1566). When he left Buda "in a most dignified manner," the king had under his banners 1500 men-at-arms, 2500 hussars, 3000 infantrymen (armed with handguns, pikes, and pavises), and nine heavy artillery pieces. This impressive display of military was recently considered as a pageant of Matthias Corvinus' military parade at Wiener Neustadt in 1487.[49] On his way to Mohács, Louis II was joined by the prelates and barons of his realm, gathering a host of around 25000 men, of which around 2000-3000 men-at-arms, 9000-10000, hussars and 12000 infantry, as well as 85 large cannons and bombards[50]. Thus, in this particular case, the ratio between heavy and light cavalry was at best 1:4, and the ratio between cavalry and infantry was 1:1. Despite this considerable war effort and the massive military preparations, the Hungarian host was routed by the Ottoman army, due to the numerical superiority of the latter. Regarding military technologies, the two fighting armies were approximately on the same level, prevailing in both the light cavalry, albeit the formidable Ottoman artillery was far more numerous than the Hungarian one.[51]

46 *Decreta*, IV, 96-105; see also the commentaries at Kubinyi, "The Road to Defeat", 162-163.

47 Rady, *Nobility, Land and Service*, 153.

48 Pálosfalvi, *From Nicopolis to Mohács*, 284-424.

49 Antonín Kalous, "The Last Medieval King Leaves Buda", *Medieval Buda in Context*, edited by Balázs Nagy, Martyn Rady, Katalin Szende and András Vadas, Leiden-Boston: Brill, 2016, 513-525 (especially: 519-524).

50 Jáos B. Szabó, Ferenc Tóth, *Mohács (1526). Soliman le Magnifique prend pied en Europe centrale*, Paris: Economica, 2009, 58-81; for a slightly different point of view of the same author see Jáos B. Szabó, "The Military Organization and Army of the Kingdom of Hungary (1490-1526)", *On the Verge of a New Era: The Armies of Europe at the Time of the Battle of Mohács*, edited by Jáos B. Szabó, Pál Fodor, Budapest: Research Center for the Humanities, 2021, 147-171 (especially: 167-170); Pálosfalvi, *From Nicopolis to Mohács*, 432-434.

51 *Ibid.*, 432-444.

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Sigismund of Luxemburg began his reign in Hungary with a series of offensive anti-Ottoman campaigns that came to hold after the ill-fated Crusade of Nicopolis in 1396. After this tragic event, the Kingdom of Hungary adopted a defensive tactic based on the system of fortifications and vassal "states" designed by King Sigismund himself. More specifically, the sovereign initiated the construction of a fortification network that secured the southern frontiers of the kingdom, from the Adriatic Sea in the west, through Bosnia and the middle course of the Danube, to the Banate of Severin, which formed the eastern "bastion" of this defensive system, Throughout the 15th century, the network was secured by the construction of new border forts or by the conquest of some strategic fortresses, like Jajce in 1463. These marches of the Hungarian Kingdom were divided into several military provinces, *banates*, like Dalmatia, Croatia, Slavonia, Macsó (today Mačva, Serbia), with the captaincy of Belgrade, Severin, and the voivodeship of Transylvania, surrounded by the natural fortress of the Carpathians. The defensive system of the Hungarian Kingdom was doubled to the south by three buffer states: Bosnia, Serbia, and Wallachia. The defense of the southern military provinces was assigned to the prominent prelates and barons of Hungary, and even the Teutonic Order assumed temporarily the Banate of Severin (1429-1435).[52]

As already shown, by 1420, the marcher lords of Hungary hired several hundred "lances," from 150, up to 1200, supported by the royal treasury through the *dispositio*.[53] Around 1432, the Teutonic Knights in the Banate of Severin hired the first known contingents of hussars, Serbian horsemen armed with sabers, lances, and shields, but no armor, to repel the swift attacks of the *akıncı* raiders. The hussars were not only more efficient against their Ottoman counterparts, but they were also much cheaper because they received a monthly wage of only 6 gold Florins (like a humble crossbowman on foot!), compared to the "lance" which received a monthly wage of 25 gold Florins. Thus, very soon, contingents

52 Ferenc Szakály, "The Hungarian-Croatian Border Defense System and Its Collapse", *From Hunyadi to Rákóczi*, 141-158; András Kubinyi, "Die südlichen Grenzfestungen Ungarns am Ende des Mittelalters", Kubinyi, *Matthias Corvinus*, 188-201; Tamás Pálosfalvi, "The Castle of Jajce in the Organization of the Hungarian Border Defence System unde Matthias Corvinus", *Stjepan Tomašević (1461.-1463) – slom srednjovjekovnoga Bosanskog Kraljevstva Zbornik radova sa Znanstvenog skupa održanog 11. i 12. studenog 2011. godine u Jajcu*, Sarajevo: Hrvatski institut za povijest Katoličko bogoslovni fakultet, 2013, 89-98; Pálosfalvi, *From Nicopolis to Mohács*, 15-25, 51-70.

53 Mályusz, *Kaiser Sigismund*, 145.

of mercenary hussars were employed by the rest of the southern marcher lords of Hungary, not only for defense but also to raid the Ottoman marches.[54] By the mid-15th century, mutual raiding of the enemy territories became a common practice on the Hungarian-Ottoman frontier, as evidenced by the fact that the peace concluded between Mehmed II (r. 1451-1481) and John Hunyadi at Adrianople, on 20 November 1451, stipulated a halt to the raids launched by the hussars and other marauders (*hussarones uel malefactores*) on both sides of the frontier[55].

After the collapse of the Serbian Despotate in 1459, massive groups of nobles and commoners sought refuge in the neighboring realms, especially in the Kingdom of Hungary. Full of resentment towards their Ottoman oppressors, the Serbian refugees offered their military services to the Hungarian king and other prelates and barons, entering their *banderia*.[56] During the previous centuries, the Serbs adopted and adapted the military tactics of the *cursores*, the light cavalry guarding the frontiers of the Byzantine Empire, dating back to the Late Roman Empire. Thus, most of the Serbians fought on horseback, armed with sabers, lances, and shields, but no armor, being called *hussarones*, a term which, until the mid-15th century, was synonymous with highwaymen or marauders[57].

Early in 1459, the hussars were already so common that King Matthias and the Hungarian Estates agreed that the traditional mounted archers, mustered one for every 20 tenant peasant plots, could be replaced with lancers on horseback.[58] Later on, a good part of the Serbian hussars were hired as mercenaries in Matthi-

54 *Ibid.*, 138; Tibor S. Kovács, *Huszárfegyverek a 15-17 században*, Budapest: Martin Opitz Kiadó, 2010, 48.

55 Bayerische Staatsbibliothek, BSB Clm 19542, f. 260 r. – 261 v., edited in Liviu Cîmpeanu Liviu, "*Volo pacem per tres annos*. O nouă ediție a tratatului dintre Mehmed al II-lea și Iancu de Hunedoara (Adrianopol, 20 nov. 1451)", *Studii și Materiale de Istorie Medie*, XXXIX, 2021, 267-269 (especially: 268).

56 Aleksandar Krstić, "*Which Realm Will You Opt For?* – The Serbian Nobility Between the Ottomans and the Hungarians in the 15th Century", *State and Society in the Balkans Before and After the Establishment of Ottoman Rule*, edited by Srđan Rudić, Selim Aslantaş, Belgrade, 2017, 129-163 (especially: 144-159).

57 Florin Nicolae Ardelean, "Between Medieval Tradition and Early Modern «Military Revolution»: Warfare and Military Structures in the Hungarian Kingdom (1490-1526) ", *Between Worlds: The Age of the Jagiellonians*, edited by Florin Nicolae Ardelean, Cristopher Nicholson, Johannes Preiser-Kapeller (eds.), Frankfurt am Main: Peter Lang Edition, 2013, 15, note 35.

58 *Decreta*, III, 10: *de singulis viginti iobagionibus censum domino suo solventibus cum uno armigero equite bene armato, gladio, clipeo, pharetra et arcu vel lancea fulcito exercituare teneatur*.

Hungarian Hussars (cavalry group on the right) fighting the Turks in the first half of the 16th century. Illustration in Antonio Bonfini, *Ungerische Chronik*, Basel, 1545, p. XXI. Source: private collection Liviu Cîmpeanu.

as Corvinus' private army, being attested at the military operations of the years 1466, 1476, 1479 and 1480.[59] As already shown above, around 2:3 of the cavalry that paraded in front of the imperial residence of Wiener Neustadt, were hussar, that is around 15000 out of 20000[60].

The semi-permanent *kleinkrieg* at the Hungarian-Ottoman frontier in the Age of the Jagiellonians (1490-1526) was fought mainly by the mercenary hussars in the *banderia* of the marcherlords. These garrisons of the southern border forts were also financed by the royal treasury, being thus rightly considered by the historiography a second "standing army" of the Hungarian Kingdom (after the mercenary army of the king).[61]

Finally, as shown above, in the Battle of Mohács (29 August 1526), the cavalry of Louis II consisted mainly of hussars, but they were no longer exclusively

59 Pálosfalvi, *From Nicopolis to Mohács*, 35-36.

60 Bonfinis, *Rerum Ungaricarum Decades*, IV/I, 152-154.

61 Pálosfalvi, *From Nicopolis to Mohács*, 30-50.

Serbians but also Hungarians, who adopted in the meantime the warfare and tactics of the former.[62]

The transformations of the Hungarian cavalry host during the Age of the Jagiellonians are very well described by the aforementioned Antal Verancsics, who wrote around 1538 that the Hungarian nobles "wage war on horseback; in the old days they were all *cataphratti* [men-at-arms], now they are lightly armed *velites* [riders]. Without any doubt, they adopted this habit from the Turks. Because in the age of King Matthias, the use of cataphracts flourished with the greatest glory and victories; under Wladislas and Louis, his son, it was gradually neglected after the bloody battle at Mohács [the cataphracts] were disbanded and swept aside along with their military order, being replaced by the ones called in the everyday language *hussarones* [hussars], either to fight more easily, thanks to the swiftness of the Turkish horses, or rather, as it is customary among all mortals, according to the laws of war, for the vanquished to adopt the habits of the victors. Their [the Hungarian hussars'] weapons are the steel helmet, the mail hauberk, the Turkish sword (called *szablya*), in the left hand a shield that protects the entire body and the head, in the right hand an iron glove with a lance adorned with a silken pennant, fixed right under the tip. They have various breeds of horses, but the best are the Turkish horses, which they save for the decisive moment of the battle because they are swifter and more agile than the others".[63]

This cavalry host was inherited by Ferdinand of Habsburg (r. 1526-1564) along with the Kingdom of Hungary. Especially after 1550, the itinerant Court of the Habsburg monarch was joined by Hungarian barons and aristocrats at the head of their hussars, clad in sparkling uniforms, shining headgear, and lanc-

62 See references in note 50!

63 Our translation after, Wrancius, *Expeditions Solymani in Moldaviam*/*De Situ Trassylvaniae, Moldaviae et Transalpinae*, 46: *Bella equestres obeunt; olim omnes cataphratti, nunc omnes velites leviter armati. Eam consuetudinem a Turcis illos accepisse nulli dubium est. Nam tempore Mattiae regis cataphrattorum usus maxime cum maxima laude ac victoriis eximiis florebat, sub Ladislao ac Ludovico huius filio paulatim caepere negligi, post vero cladem Mohachiensem etiam exauthorati sunt ac penitus una cum disciplina militari intermissi succesereque, quos vernaculo sermone hussarones appellant, puto, facilitate militandi equorumque Turcalium agilitate illecti vel potius, quod ex bellorum licentia omnibus mortalibus usu venire solet, ut victi in victorum mores abiere. Arma illis cassis calybea, lorica hamata, gladius Turcicus (zablam dicunt), in sinistra clypeus, quia totam thoracem et caput tegat, in dextra chyrotheca ferrea et lancea cum flameolo quodam sericeo sub cuspide apposito. Equi varii, sed Turcici praecipui, quos summo discrimini servant, quod et velociores sunt et agiliores caeteris quique in untranque manum versatile esse et procurrendi ac recurrendi non ultra certos numeros edocentur.*

es decorated with red and white pennants, mounted on beautifully caparisoned horses with gold and silver tackle. Thus, hussar regiments, whose numbers varied from a few dozen to several hundred, accompanied their sovereign on his journeys, at coronations, at Diets, at funerals, at knightly tournaments, and on other royal ceremonies to Prague, in Bohemia, to Vienna, in Austria, to Innsbruck, in Tyrol, and to Augsburg and Speyer, in The Holy Roman Empire. For instance, at a tournament held in Prague in 1549, Archduke Ferdinand of Tyrol, by that time regent of Bohemia, was fond of the performance of the Hungarian hussars, ordering later the display of several hussar uniforms in his museum at the Castle of Ambras, near Innsbruck.[64] This was the breakthrough of this already semi-legendary cavalry into the European armies and conscience.

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Information about the cavalry host of Moldavia in the Late Middle Ages is scarce and barely allows us to sketch its social composition, internal structure, weaponry, and tactics. The earliest details about the military might of the Moldavian voivodes can be found in the chronicles describing the ceremonies during which the latter became vassals of the kings of Poland in 1415, 1436, and 1485. Thus, in 1415, at Sneatyn (today in Ukraine), before King Wladyslaw Jagiello (r. 1386-1434) appeared Voivode Alexander the Good (r. 1400-1432) at the head of "a great host of his knights" (*maxima militum suorum cohorte*).[65]In 1436, in Lviv (today also in Ukraine), Wladislaw Jagiello II (r. 1434-1444) met Voivode Elias (r. 1432-1444 with interruptions) with his boyars and officeholders (*cum omnibus baronibus et consiliariis suis*)[66]. The latter also pledged allegiance to the Polish king through a charter they issued as "the knights, boyars and officeholders of the Moldavian voivode."[67] Finally, in 1485, at Colomeea, Kazimir IV (r. 1447-1492) received the oath of vassalage from Voivode Stephan the Great (r. 1457-1504) and all his armed men (*armigeri*), who were knighted by the Polish

64 Géza Pállfy, *The Kingdom of Hungary and the Habsburg Monarchy in the Sixteenth Century*, translated from the Hungarian by Thomas J. and Helen DeKornfeld, New York: Columbia University Press, 205-206.

65 Ioannis Dlvgossi sev Longini, *Historiae Polonicae libri XII*, [Tomus I], Lipsiae: Svmptibus Ioannis Lvdovici Gleditschii et Mavritii Georgii Weimanni, MDCCXI, col. 367.

66 *Ibid.*, col. 690-692.

67 Mihai Costăchescu, *Documentele moldovenești înainte de Ștefan cel Mare*, vol. II. *DOCUMENTE INTERNE. Urice (ispisoace), surete, regeste, traduceri 1438-1456; DOCUMENTE EXTERNE. Acte de împrumut, de omagiu, tractate, solii, privilegii comerciale, salv-conducte, scrisori. 1387-1458*, Iaşi: Viaţa Românească S.A., 1932, 701-703.

King.[68] These examples reveal that in the Late Middle Ages the boyars and the knights were the backbone of the Moldavian army.

The Chronicle (*Letopiseţ*) written at the Court of Stephen the Great attests the boyars and knights (*viteji*) at the side of their voivode in the military exploits of 1473, 1475, 1476, 1481, and 1497.[69] The same source also mentions twice the hussars in the service of Voivode Stephan, as victims of the Battle of Războieni, in the summer of 1476, when the Moldavian army was routed by the Ottomans.[70] The medieval German translation of the same Chronicle, *Chronica breviter scripta*, calls *Ryttern* the armed men of Stephen the Great who fought the Wallachians in 1473, and the brother-in-law of the voivode, Şendrea, who was slain in a battle against the same Wallachians in 1481, was considered as *eyn retlycher rytter*.[71]

As descendants of the "founding fathers" who joined as retainers Voivode Bogdan I (r. ca. 1359-1367) from Maramureş into Moldavia, the boyars were not only related to each other but also to the ruling family.[72] Not only because their family ties, but also because the pledge of allegiance they took at the beginning of every new rule, the boyars owed loyalty to their voivode, whom they had to support politically and militarily.[73] The military might of the boyars was in full display during a civil war that raged in Moldavia between 1432-1457 when various factions supported with their armed men the heirs of Alexander the Good.[74] Later on, genuine boyar clans, like the *herby* in neighboring Poland, are attested such as the *Găneşti* ("Heirs of Ganea") and *Arbureşti* ("Heirs of Arbure"), who

68 Victor Eskenasy, "Omagiul lui Ştefan cel Mare de la Colomeea. Note pe marginea unui ceremonial medieval", *Ştefan cel Mare şi Sfânt: Portret în istorie*, [edited by Ştefan S. Gorovei], Putna: Editura Muşatinii, 2003, 439-457 (especially: 450-456); *Scriptores reum Polonicarum*, tomus II. *Chronicorum Bernardi Vapovii partem posteriorem 1480-1535*, Cracoviae: Typis Universitatis, 1874, 4: *cum ecce Stephanus Palatinus cum gentis sue purpuratis et nobilissimo quoque magna pompa supervenit*.

69 *"Letopiseţul de când s-a început Ţara Moldovei". Letopiseţul lui Ştefan cel Mare*, edited by George Mihăilă, Bucureşti: Editura Academiei, 2006, 45-46, 46, 47, 48-49.

70 *Ibid.*, 46,

71 Ion Const. Chiţimia, *Cronica lui Ştefan cel Mare (versiunea germană a lui Schedel)*, Bucureşti: Casa Şcoalelor, 1942, 42, 47.

72 Lucian Valeriu Lefter, *Boieri ai Moldovei înainte şi din vremea lui Ştefan cel Mare*, Cluj-Napoca: Editura Mega, 2022, *passim*.

73 Constantin Rezachevici, , "A fost Ştefan cel Mare «ales» domn în aprilie 1457?", *Ştefan cel Mare şi Sfânt: Portret în istorie*, 316-333.

74 Constantin Rezachevici, *Cronologia critică a domnilor din Ţara Românească şi Moldova, a. 1324-1881*, vol. I. *Secolele XIV-XVI*, Bucureşti: Editura Enciclopedică, 2001, 476-534.

governed the Moldavian affairs in the first decades of the 16th century.[75]

The sources on the above-mentioned ceremonies of Lviv (1436) and Colomeea (1485) reveal the important detail that, along with the Moldavian voivode, the boyars broke the lances of their flags and banners in the first case, respectively, they threw to the ground lances of their flags and banners in the second case, as a sign of submission towards the Polish king.[76] The flags and banners of the boyars were not only decorative assets, but also tangible symbols of their military might, under which their armed retainers assembled. Thus, it seems reasonable to conclude that the retinues (*cete*) of the Moldavian boyars resembled the *banderia* of the prelates and barons in the Hungarian Kingdom. Like every military elite, the boyars and their retainers fought on horseback with the best available weapons and equipment.

The great office holders of Moldavia had under their banner not only their retinue but also the armed men of the assigned counties (*ţinuturi*), like the notorious case of the *Râzeni* ("Heirs of Râzea") boyars, who were obliged to join the retinue (*ceată*) of Radu Gangur, castellan (*pârcălab*) of Orhei, a border fort located in north-eastern Moldavia.[77]

Despite the theoretical aspects, the loyalty of the boyars towards their voivode was very fragile, depending mainly on the latter's charisma and the ability to negotiate and compromise. Thus, the ruler needed a steady military force under his direct command, and this was made up of the knights, called by the Moldavian Chronicles *viteji*.[78] Unfortunately, this military category is not attested by documentary sources, but it might be identified with the *nemişi* (from the Hungarian *nemes*) attested in the second half of the 16th century, who were members of the land-owning gentry with permanent military obligations towards the voivode.[79]

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75 Ştefan S. Gorovei, "Găneştii şi Arbureştii (Fragmente istorice, 1538–1541)", *Familiile boiereşti din Moldova şi Ţara Românească. Enciclopedie istorică, genealogică şi biografică*, vol. I, *Abaza – Bogdan*, edited by Prince Mihail-Dimitrie Sturdza, Bucureşti: Editura Simetria, 2004, 92–97.

76 Dlvgossi, *Historiae Polonicae*, [I], col. 691: *hastilia banderiorum in signum subiectionis et obendientiae grangunt*; Eskenasy, "Omagiul lui Ştefan cel Mare", 452: *armigeri omnes Palatini Moldauiae stantes circa solium Maiestatis Suae banderia parua, e manibus in terram strauerunt*.

77 Ioan Bogdan, "Documentul Râzenilor din 1484 şi organizarea armatei moldovene în secolul XV", *Analele Academiei Române,* seria II. *Memoriile secţiunii istorice*, XXX, 1908, 361-441.

78 *"Letopiseţul de când s-a început Ţara Moldovei"*, 45-46, 46, 47, 48-49.

79 "Cronica moldo–polonă", *Cronicile slavoromâne din secolele XV– XVI publicate de Ioan Bogdan*, edited by Petre P. Panaitescu, Bucureşti: Editura Academiei, 1959, 186; *Documente şi însemnări româneşti din secolul al XVIlea*, edited by Gheorghe Chivu, Magdalena Geor-

Jan Dlugosz notes that after the anti-Ottoman victory of Vaslui, on 10 January 1475, Stephen the Great elevated many of peasant footmen to the rank of mounted knights.[80] According to the same chronicler, after defeats like the one inflicted by the Ottomans at Războieni, on 26 July 1476, the Moldavian voivode used to replace the ranks of the fallen with peasants (*Stephanus Voieuoda Valachiae, instaurata ex agrestibus in supplementum eorum, qui in clade Turcorum ceciderant, militia*).[81] These statements of Jan Dlugosz are confirmed by the Chronicle written at the Court of Stephan the Great records that, after the victorious campaigns of 1473, 1475, 1481 and 1497, the voivode invinted his entire host to feasts during which he knighted many ordinary soldiers, rewarding them generously with rich gifts.[82] These "rich gifts" were not only garments and weapons, but also land donations and tax exemptions, thus the peasant footmen were not receiving a simple military distinctions, as stated by the former historiography, but they "promoted" to the ranks of the landed, tax-exempted nobility.[83] Ironically, the donation-charters issued by Stephan the Great are not preserved but they are attested by later charters of the 16th century.[84] These donations and tax-exemptions ensured the Moldavian knights the material means to purchase their specific horses, wapons and equipment, attested by the chronicler Grigore Ureche, in the mid-17th century. The latter records the historical (mainly oral) tradition of Stephan the Great's wars, during which allegedly appeared Saint Prokopios (1481) and Sant Demetrios (1497) "on horseback and armed like a *vitiaz*."[85] Unfortunately, one can not state how a *vitiaz* was armed and equipped, but it is sure that he fought on horseback.

Through donations and tax exemptions, Stephan the Great also ensured the

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gescu, Magdalena Ioniță *et alii*, Bucureşti: Editrua Academiei, 1979, 160–170; Liviu Cîmpeanu, *Cruciadă împotriva lui Ştefan cel Mare. Codrii Cosminului – 1497*, Bucureşti: Editura Humanitas, 2022, 172-173.

80 Ioannis Dlvgossi sev Longini, *Historiae Polonicae libri XII*, [Tomus II], Lipsiae: Svmptibus Ioannis Lvdovici Gleditschii et Mavritii Georgii Weimanni, MDCCXII, col. 526: *plurimi agrestes ec peditum numero in equitum et militum numero translavit.*

81 *Ibid,* col. 562.

82 *"Letopiseţul de când s-a început Ţara Moldovei"*, 45-46, 46, 47,

83 Cîmpeanu, *Cruciadă împotriva lui Ştefan cel Mare*, 172-173.

84 Cătălina Chelcu, Marius Chelcu, "Din uric de la bătrânul Ştefan voievod. Întregiri documentare", *Ştefan cel Mare la cinci secole de la moartea sa*, edited by Petronel Zahariuc, Siviu Văcaru, Iaşi: Editura Alfa, 2003, 107–162.

85 Grigore Ureche, "Letopiseţul Ţării Moldovei de când sau descălecat ţara şi de cursul anilor şi de viaţa domnilor carea scrie de la Dragoş Vodă până la Aron Vodă", *Ştefan cel Mare şi Sfânt: Portret în cronică*, [Edited by Ştefan S. Gorovei], Putna: Editura Muşatinii, 2004, 57, 65.

loyalty of his knights, attested in the major battles of 1467, 1473, 1475, 1476, 1481, and 1497, not only the Court Chronicle but also by Jan Dlugosz. It has been rightly stated that the *viteji* of Moldavia were the pageant of the *milites aulae* in the Kingdom of Hungary.[86]

To enhance the numbers of armed men, the voivodes of Moldavia confirmed the land ownership of some rural communities and partially exempted them from paying taxes, in exchange of military service. They were called *curteni*, meaning servants of the Court, the syntagm referring either to the voivode's retinue or to one of his residences, both named in Romanian *curte*. The latter interpretation seems more plausible since the communities of *curteni* were spread throughout the 24 counties (*ţinuturi*) of Moldavia.[87] A "Moldo-Polish Chronicle," written around 1565, states that the voivode had under his banner 8000 armed men, of which 3000 were *nemişi* (knights).[88] A census of taxpayers from 1591 records more precisely that in the 24 counties (*ţinuturi*) of Moldavia lived 4948 *curteni* and 3020 *nemişi*.[89] Despite living rural settlements, the *curteni* were not simply peasants, recorded separately by the same census.[90] This information is confirmed by the chronicler Martin Bielski, who describes the Battle of Obertyn, in 1531, in which the mercenary army of Poland defeated the much larger, yet archaic host of Moldavia, formed out of *curteni* and peasants in arms. The same chronicler gives us the valuable information that the Moldavian *curteni* were skilled lancers on horseback.[91]

Of course, in case of extreme emergency, the voivode of Moldavia could call his peasants in arms, albeit this happend only seven times during the Late Medieval Age: 1395, 1450, 1467, 1475, 1486, 1497, and 1531.[92] For obvious reasons, communist historiography in Romania emphasized that the voivodes created a genuine standing army of peasants, which successfully faced both external threats and the anarchic tendencies of the boyars.[93] Of course, this interpretation

86 Bogdan, "Documentul Râzenilor din 1484", 365-366.

87 Cîmpeanu, *Cruciadă împotriva lui Ştefan cel Mare*, 173-175.

88 "Cronica moldo-polonă", 186.

89 *Documente şi însemnări româneşti*, 160-150.

90 *Ibid.*

91 Martin Bielski, "Sprawa rycerska", *Archiva Istorică a României*, vol. I/2, Bucureşti, 1865, 168.

92 Cîmpeanu, *Cruciadă împotriva lui Ştefan cel Mare*, 175-176.

93 Nicolae Stoicescu "«Oastea cea mare» în Ţara Românească şi Moldova (secolele XIVXVI)", *Oastea cea mare. Tradiţii înaintate ale luptei maselor populare pentru libertate şi independenţă naţională*, Bucureşti: Editura Militară, 1972, 40–45.

has nothing to do with the medieval realities, which were far more complex. Jan Dlugosz states that during the Moldavian-Hungarian war of 1467, Stephan the Great "called to arms not only the knights and the nobles but also the peasants, teaching each of them to defend their homeland. If he caught a peasant without arrows, bow, sword, and spurs, he had him beheaded without mercy."[94] This interesting statement of the Polish chronicler is solid evidence that the Moldavian voivode required his peasants to gather under his banner as mounted archers, much like the *militia portalis* in the neighboring Kingdom of Hungary. Thus, one can state that there was a proportional conscription of the Moldavian peasants and not a general levy of all valid men in Moldavia, as emphasized by the communist historiography in Romania. As landowners, neither the voivode nor the boyars were interested in losing valuable peasants since their great domains would have been worthless without labor force, given the low population density in Moldavia. Finally, one can conclude that the peasants in arms weren't a ragtag crowd armed with farming tools, but mounted archers with minimal military equipment (swords, spurs, etc.).

Finally, the Moldavian voivodes also hired mercenary horsemen, for instance, in 1432, when Voievode Elias received several thousand Tatars from Duke Swidrigaillo of Lithuania, his ally.[95] In 1457, Stephan the Great seized the throne of Moldavia from Peter Aron (r. 1451-1457, with interruptions), seemingly at the head of a contingent of Wallachian mercenaries, who, as we will see in the following pages, also fought on horseback.[96] As already mentioned above, in 1476, the voivode had in his paid service hussars,[97] who were mostly of Balkan origin.[98] In 1485, King Kazimir IV of Poland sent at his own expense a strong contingent of 3000 men-at-arms to Voivode Stephan of Moldavia, who remained in the service of the latter at least until the beginning of the following year.[99] Considering similar situations in the early 17th century,[100] one can assume

94 Dlvgossi, *Historiae Polonicae*, [II], col. 417: *et non militares modo et nobiles, sed et agrestes in arma cogerat; si quem agrestem copmerisset, non habere sagittas, arcum, aut gladium, aut in expeditionem calcariatum non accurisse, absque vlla commiseratione capite damnabat*.

95 Liviu Cîmpeanu, "Anul 1432: începutul conflictului dintre Ilie Vodă şi Ştefan Vodă, fiii lui Alexandru cel Bun. Documente indedite din arhiva ordinului teuton", *Studii şi Materiale de Istorie Medie*, XXXIII, 2015, 168-169, 181.

96 Cîmpeanu, *Cruciadă împotriva lui Ştefan cel Mare*, 63-64, 69-70.

97 *"Letopiseţul de când s-a început Ţara Moldovei"*, 46.

98 Constantin Rezachevici, "Despre evoluţia husarilor (hânsarilor) la români în Evul Mediu", *Studii şi Materiale de Muzeografie şi Istorie Militară*, 4–5, 1971–1972, 79–94.

99 Cîmpeanu, *Cruciadă împotriva lui Ştefan cel Mare*, 108-112.

100 In the early 17th century, several members of the princely family Movilă seized the Moldavian

that the voivode hired at least a small part of these men-at-arms after they were called back by the Polish monarch. Finally, between 1486-1491, Stephen the Great hired the Ruthenian highwayman Muha and his raiders, mostly of Tatar origin, to ransack the southeastern provinces of Poland.[101]

The available sources reveal that the cavalry host of Moldavia was quite well-armed and equipped. In 1430, King Sigismund considered that he could count on 10.000 horsemen equipped with mail hauberks (*pancerati*) from Moldavia and Wallachia.[102] Albeit slightly exaggerated, the numbers of 5000 horsemen for each of the two voivodeships seem plausible. This statement is confirmed by the fact that in 1448, Pasuale de Sorgo saw in John Hunyadi's camp at the Danube 3000 cavalry from Moldavia, "levied from the best class and excellentely equipped with weapons."[103] Even Peter Aron, whose reign was contested by the strong faction of the rival voivode[104], could promise "400 lancers on horseback, well equipped for war with mail hauberks," to his liege lord, King Kazimir IV of Poland.[105] According to the chronicler Ibn Kemal, during the Moldavian-Ottoman war of 1475, "the wicked *serdar* [warchief] of Moldavia gathered his armed men, giving to each of those rogues weapons and mail hauberks, transforming his magnificent host into a mountain of steel chainmail."[106] There are also documents from 1502, which attest the fact that Stephan the Great bought breastlates from the Transylvanian-Saxons of Hermannstat (today Sibiu, Romania).[107] In the same year, the voivode requested from his subjects in the recenty annexed province of Pocutia "to have horses, lances, arrows and shields, and the footmen to have spears and shields."[108]

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throne with the military aid of their Polish relatives, whose contingents usually remained in the paid service of the ruling voivodes, see Valentin Constantinov, *Ţara Moldovei în cadrul relaţiilor internaţionale (1611-1634)*, Iaşi: Casa Editorială Demiurg, 2016, *passim*.

101 Liviu Cîmpeanu, "*Ein Rewsze mit Namen Mucha*... Din istoria relaţiilor moldo-polone în 1486/1488-1491", *Analele Putnei*, XI, 2, 2015, 25-40.

102 *Documente privitoare la Istoria Românilor culese de Eudoxiu de Hurmuzaki*, vol. I, 2, Bucureşti: Stabilimentul Grafic I. V. Socec, 1890, 568.

103 Whelan, "Pasquale de Sorgo", 138 (Latin), 142 (English).

104 Liviu Pilat, *Moldova, sfânta coroană şi regii jagielloni. Vasalitate, putere şi gândire politică (1387-1526)*, Târgovişte: Editura Cetatea de Scaun, 2023, 153-176.

105 Costăchescu, *Documentele moldoveneşti*, II, 781, 785.

106 Şemseddin Ahmed bin Suleiman Kemal PaşaZade, "Cronicile dinastiei otomane", *Ştefan cel Mare şi Sfânt: Portret în cronică*, 267.

107 *Documente privitoare la Istoria Românilor culese de Eudoxiu de Hurmuzaki*, vol. XV, 1, edited by Nicolae Iorga, Bucureşti: Atelierele Grafice Socec&Co, 1911, 158.

108 Ioan Bogdan, *Documentele lui Ştefan cel Mare*, vol. II, Bucureşti: Editura Cartea Românească, 1913, 465.

Albeit well-armed and equipped, the Moldavian horsemen were a far cry of the Western-style chivalric men-at-arms. As a military category, they were more akin to the light horsemen of the steppes, armed with bows and arrows for the ranged fight and swords, lances and shields for the close combat. One of the first references to the weapons and tactics of the Moldavian cavalry can be found at Jan Dlugosz, who records that in the Polish-Teutonic war of 1420, 400 horsemen of the Moldavian voivode joined the host of Wladyslaw Jagiello. "They descended almost to Marienburg [today Malbork, Poland], plundering and pillaging. The Crusaders [= Teutonic Knights] in the garrison of Marienburg attacked them with a great host. Considering the numbers and strength of the enemies over the meagerness of their forces, the Moldavians fell into despair and let the faith decide. With nothing left to do, they entered a nearby forest and dismounted to fight on foot, covered by the foliage and trees, according to the that nation's nature and habit of waging war. The Crusaders, convinced by the fact that the Moldavians didn't simulate their escape, but crossed the entire width of the forest, rushed towards it, hoping to catch easily the Moldavians since many of them dismounted. But the Moldavians, covered against the arrows of their enemies, launched from their bows a hail of arrows at the latter, injuring many men and horses alike. Then, they charged against the Crusaders, slaying and capturing the first in their way and putting the others to flight. Thus, in a wonderful way, the Moldavians, with only a few men, routed the great host of the enemies, returning to the camp of the king as victors and loaded with spoils of war." [109]

An overview of the wars waged by Stephen the Great in the second half of the 15th century reveals that his host consisted of light cavalry that used the

109 Dlvgossi, *Historiae Polonicae*, [I], col. 461-462: *sub tempore eodem, Voieuodae Moldauiae gentes, Valachi, in auxilium Wladislao Poloniae regis transmisse, quadrigentorum militum numerum explentes, vsque prope Marienburg praedatum pabulatumque descenderant, praedasque agebant. Contra quos Cruciferi, in forti militum exercitu, qui in praesidio castri Marienburg morabatur, erumpentes, illos inuadunt. Qui cum hostium numerum et vires, suamque exiguitatem metirentur, in desperationem versi, rem fortunaman committunt. Sumpsitquetunc, postuqam nihil superesset, arma formido, et nemus proximum ingressi, equis desiliunt, facilius vt est mos et natura gentis, tecti fronde et ligno, pedestres certaturi. Cruciferi rati Valachos certam non simulatam fugam capessisse et latitatum siluas abiisse, et in Valachorum capturam existimantes rem nulius negotii fore, armantur, cum complures qorum equis desiliissent. Verum Valachi vibrando in hostes tela, tuti ipsi a telis, nonsecus quam imbrem mittunt. Et tam hominibus quam equis, frequenti proiectione telorum vulneratis, plures etiam ex illis conficiunt. Adeoque in Cruciferos inuehuntur, vt primis eorum odrinibus aut occisus aut captis, reliquos in fugam verterent. Sicque miro modo Valachi, cum parua gentium suarum caterua, gradi hostium exercitu profligato, ad stationes exercitus regii, onusti praeda ingenti victores reuertuntur.*

same tactics of attack, simulated retreat and counterattack, and that could also dismount and fight on foot when needed. Thus, the horsemen of the voivode charged headlong against the Ottomans in the Battle of Vaslui (1475) and against the Poles and the Teutonic Knights, their allies, in the Battle of Codrii Cosminului (1497). On the other hand, the cavalry of the Moldavian voivode dismounted and fought on foot on the offensive against the Hungarians in the Battle of Baia (1467) and in the defensive, behind a *wagenburg*, against the Ottomans in the Battle of Războieni (1476).[110] The Polish chronicler Bernard Wapowski offers a very vivid image of the Moldavian cavalry host during the battle against the Ottoman invaders at Cătlăbuga, in the south-eastern Moldavia, in the autumn of 1485. Voivode Stephen located at the center of his battle lines the 3000 men-at-arms paid by King Kazimir (mentioned above!) and a detachment of Moldavian light cavalry on each flank. The Ottoman *akinci* horsemen formed their traditional battle lines in the shape of a crescent with the tips towards the enemies. After a skirmish between the Moldavians and *akinci* in the flanks, the formers retreated in the back of the Polish men-at-arms, who routed the lightly equipped ranks of the Ottoman cavalry. After some rest, the Moldavian light cavalry charged from behind the men-at-arms, who stood like a fortress, and gave the final blow to the Ottoman horsemen.[111]

The Moldavian light cavalry could move swiftly over long distances, being also capable of wide maneuvres, as demonstrated by the military operations during the campaign of Voivode Bogdan III (r. 1504-1517) against the voivodship of Red Russia in south-eastern Poland in 1509. In only a few days, the cavalry host of the Moldavian voivode reached the remote city Lviv, which they tried in vain to besiege.[112]

Finally, in 1531, Peter Rareş (r. 1527-1538; 1541-1546) mustered a massive army to conquer once and for all the disputed province of Pocutia. According to

110 Cîmpeanu, *Cruciadă împotriva lui Ştefan cel Mare*, 70-72 (Battle of Baia - 1467); 79-83 (Battle of Vaslui - 1475); 86-88 (Battle of Războieni – 1476); 226-235 (Battle of Codrii Cosminului – 1497).

111 *Scriptores reum Polonicarum*, II. *Chronicorum Bernardi Vapovii*, 4-5.

112 Ovidiu Cristea, "Knocking at the Enemy's Gate: a Gesture of Power of Bogdan III of Moldavia (1509)", *Orient et Occident Construction des identités en Europe médiévale*, edited by Luminiţa Diaconu, Bucureşti: Editura Universităţii din Bucureşti, 2015, 153-172; Katarzyna Nemczyk, "A Few Remarks about Bogdan the One-Eyed's Matrimonial Policies in the context of the conflict between Poland and Moldova in 1509", *Medieval Studies/Studia z Dziejów Średniowiecza*, 22, 2018, 153-162; Katarzyna Nemczyk, "Difficult Relations between the Family of Chodecz and Bogdan III the One-Eyed", *Codrii Cosminului*, XXIV, 1, 2018, 97-112 (especially: 106-109).

Martin Bielski, the Moldavians were *curteni* and peasant in arms, who fought as lancers on horseback with little or no armor.[113] Despite its numbers of around 20.000 men, this archaic cavalry host of Peter Rareş was routed by 6000 mercenaries of Hetman Jan Tarnowski, who fought according to the latest tactics, combining heavy cavalry units with pike and shot formations and modern artillery. This Polish victory demonstrated that the light horsemen of the Moldavian voivode were already obsolete in the third decade of the 16th century.[114] Later on, the Humanist Antal Verancsics stated that the Moldavians "fight mainly on horseback. They use footmen only for skirmishes against the enemies in the mountains, and these are very few and without any order. The main weapons of the Moldavians are, just like the Tatars, the shield, the lance, the sword, and the arrows [and bows]; no one has heavy armor; a few and only from among the well-to-do have only mail hauberks and helmets of steel; but for their protection, they put on some linen clothes, filled with cotton, three of four fingers thick, especially at their shoulders up to their elbows […] with dense stitching at one and a half finger lengths apart, and these [gambesons] are considered armor because the sword cannot pierce them."[115]

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Backed by the Tatars, the Bulgarians, and the Byzantines, Voivode Basarab I (r. *ante* 1324-1352) managed to bring under his authority the Wallachian and Slavic boyars, but also the Cuman and Tatar warchiefs of Wallachia, former Cumania, lying between the Carpathians and the Lower Danube.[116] The voivodes of Wallachia in the 14th and 15th centuries managed to preserve the

113 Martin Bielski, "Sprawa rycerska", *Archiva Istorică a Românei*, vol. I/2, Bucureşti, 1865, 168.

114 Ştefan S. Gorovei, *Petru Rareş (1527-1538; 1541-1546)*, Bucureşti: Editura Militară, 1982, 94-100.

115 Our translation after, Wrancius, *Expeditions Solymani in Moldaviam*/*De Situ Trassylvaniae, Moldaviae et Transalpinae*, 40: *equestres plaerumque militant, pedestrium copiarum nullus usus, nici ad lacessendum hostem in montanis, hasque vagas et sine ordine habent. Arma Moldavis clypeus, lancea, gladius, sagitte, ut Tartaris praecipua, nemina armatura solida, paucis et iis potioribus lorica hamata dumtaxat et galea chalybea, verum omnibus sagi quidam linei repleti xilino trium vel quator digitorum crassitudine, ea praesertim parte, qua humeri ad usque cubitus* […] *induuntur, qui crebris liciis sesqui digiti inter se distantia consuti pro armatura habentur, nulli gladio pervia, praesertim si humecti fuerit*.

116 István Vásáry, *Cumans and Tatars. Oriental Military in the Pre-Ottoman Balkans, 1185-1365*, Cambridge: University Press, 2005, 134-155.

allegiance of the local elites, called by the sources "boyars" regardless of their ethnic origin, only by personal charisma and the ability to conclude political agreements and compromises. Thus, the Wallachian boyars closed ranks around various members of the ruling house, forming genuine warring parties, for example the *Drăculeşti* and *Dăneşti* who fought for the throne during the whole 15th century.[117] The most notorious case was that of Albu the Great "who rose to the reign over the Impaler's head."[118] Vlad Dracula (r. 1448, 1456-1462, 1476) crushed the rebellion of Albu the Great and, with his notorious cruelty, he slayed the latter's entire kindred, including his armed retainers.[119]

The political scene of Wallachia was dominated by the warring boyar clans of Brăila, Buzău, Argeş and Lesser Wallachia (today Oltenia, Romania) up to the second half of the 16th century, when they were finally subdued by the voivodes directly appointed and backed by the Sublime Porte.[120] The political might of the Wallachian boyars rested on their contingents (*cete*) of armed retainers, like the ones of their peers in Moldavia, or like the *banderia* of the prelates and barons in the Kingdom of Hungary.[121] The boyars who were appointed in territorial offices had under their flags their retainers, but also the armed men of the region. For instance, in 1368, Dragomir the Wallachian, castellan (*pârcălab*) of Dâmboviţa, a border fort located in the Carpathian Mountains between Wallachia and Transylvania, tried to repel with the armed men of his garrison an attack of the Transylvanian host under Voivode Miklós Lackfy.[122] Another example is that of the unnamed castellans (*pârcălabi*) of Teleajen, a border fort located on the north-eastern frontier between Wallachia and Moldavia, who were slain along with their garrison, while trying to repel an attack of the Moldavians, in 1474.[123]

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117 Rezachevici, *Cronologia critică*, 86-129.

118 *Corpus Draculianum. Documentele şi cronicile relative la viaţa şi domnia voievodului Vlad Ţepeş*, vol. I. *Scrisori şi documente de cancelarie*, Tom 1. *Cancelarii valahe*, edited by Adrian Gheorghe, Albert Weber, Alexandru Şrefan Anca, Ginel Lazăr, Bucureşti-Brăila: Editura Academiei Române-Editura Istros, 2019, 169.

119 Nicolae Stoicescu, *Vlad Ţepeş*, Bucureşti: Editura Academiei, 1976, 45-46.

120 Marian Coman, *Putere şi teritoriu. Ţara Românească medievală (secolele XIVXVI)*, Iaşi: Editura Polirom, 2013, *passim*.

121 *Instituţii feudale din Ţările Române. Dicţionar*, edited by Ovid Sachelarie, Nicolae Stoicescu, Bucureşti: Editura Academiei, 1988, 94-95.

122 Thurocz, *Chronica Hungarorum*, I, 181-182 (excerpt of the Chronicle of János Küküllői, written in the second half of the 14th century); Nicolae Constantinescu, *Vladislav I, 1364-1377*, Bucureşti: Editura Militară, 1979, 114-114.

123 *"Letopiseţul de când s-a început Ţara Moldovei"*, 46; Chiţimia, *Cronica lui Ştefan cel Mare*, 43; Cîmpeanu, *Cruciadă împotriva lui Ştefan cel Mare*, 83-84.

Considering the military might of their boyars, the voivodes of Wallachia tried to organize a steady force of loyal men by granting them lands and fiscal exemption in exchange for military service. Thus, Mircea the Old (r. 1386-1418) issued several charters of donations and tax exemptions for petty boyars who were obliged "only to join the great host of My Highness." If these landowners had died without heirs, they were also obliged to leave their horses, and presumably their weapons, to the voivode, as was customary also in the medieval Kingdom of Serbia.[124] This military category might be regarded as the counterpart of the *viteji* of Moldavia and the *milites aulae* in the Hungarian Kingdom.

The creation of knights (*viteji*) is literally attested by the Slavic Chronicle of Voivode Dracula, *Skazanie o Drakule voevode*, written by Fyodor Kuritsyn in 1486. According to this text, in 1462, after a night attack on Mehmed II's camp, Dracula "personally examined those who returned from combat with him. Whoever was wounded in the front, he honored and armed him as a knight (*viteaz*). However, he ordered whoever was wounded in the back to be impaled upwards from the rectum, saying to him, «You are not a man, but a woman».''[125] Of course, this is a literary text, but the essence on the creation of knights (*viteji*) by the Wallachian voivode can be taken for granted. This statement is also confirmed by the Chronicle written at the Court of Stephan the Great that attests twice the Wallachian boyars and knights of Radu the Fair (r. 1462-1475, with interruptions) and Basarab IV (r. 1474-1481, with interruptions).[126] During the reign of Vlad Dracula are attested for the first time the servants of the Court (*curteni*),[127] who will form the backbone of the Wallachian army during the 16th and 17th centuries.[128]

Finally, the Wallachian voivodes strengthened their authority by hiring mercenaries, including from their realm. For instance, in 1426, King Sigismund of Hungary financially supported his vassal, Dan II (r. 14212-1431, with interruptions), to hire 100 horsemen and 900 footmen from Wallachia for a month to recall his Transylvanian troops north of the Carpathians.[129]

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124 Petre P. Panaitescu, *Mircea cel Bătrân*, Bucureşti: Casa Şcoalelor, 1944, 129-132.

125 *Skazanie o Drakule voevode* in Matei Cazacu, *Dracula*, Leiden-Boston: Brill, 2017, 357-358.

126 *"Letopiseţul de când s-a început Ţara Moldovei"*, 45, 47.

127 Constantin Mihailovici de Ostroviţa ["Memoriile ienicerului sârb"], *Călători străini despre Ţările Române*, edited by Maria Holban, Bucureşti: Editura Ştiinţifică, 1968, 126: *kurtianom*.

128 Nicolae Stoicescu, *Curteni şi slujitori. Contribuţii la istoria armatei române*, Bucureşti: Editura Militară, 1968, 15-20.

129 *Documenta Romaniae Historica*, seria D. *Relaţii între Ţările Române*, vol. I (1222–1456), edited by Ştefan Pascu *et alii*, Bucureşti: Editura Academiei, 1977, 242-245.

Between 1456 and 1462, during his second rule, Vlad Dracula relied on a ragtag mercenary force, "a conglomeration of peoples," whose absolute loyalty had been earned by granting them the money, the goods, and the property of his annihilated enemies, like the great boyar Albu.[130] In 1476, during his third rule, the voivode asked Transylvanian-Saxons of Kronstadt to send him Hungarian, Szekler or Wallachian mercenaries to whom he intended to donate land and receive them into the ranks of his servants because he had no money to pay their wages.[131]

On the other hand, at the end of 1479, the exiled voivode Basarab III (r. 1473-1477, with interruptions) and his mercenary horsemen from Wallachia entered the service of the Transylvanian voivode Stephen Báthory (r. 1479-1493), who assigned the former to guard the southern frontier of the province.[132] After de death of Basarab III, by late 1480, Stephen Báthory ordered the town council of the Transylvanian-Saxon city of Kronstadt to hire 110 mercenary horsemen from the retinue of the late voivode of Wallachia.[133] A few months later, in march 1481, the Transylvanian voivode ordered again the town council of Braşov to hire 300 horsemen from the retainers of late Basarab.[134]

Albeit it is clear that the voivodes of Wallachia had a cavalry host under their banners, the preserved sources offer scarce information on the weapons, equipment, and tactics of the Wallachian horsemen. Nevertheless, the analysis of the main military exploits in the 14th and 15th centuries offers some interesting conclusions. First of all, one should emphasize that in the first half of the 14th century, Basarab I brought under his authority the Cuman and Tatar military elite between the Carpathians and the Danube, who preserved their traditional way of waging war as mounted archers. In the meantime, the Wallachians also adopted the weapons, equipment, and tactics of the steppe warriors; on one occasion, the Byzantines even mistook them for Tatars.[135]

130 Michael Beheim, "Von ainen wutrich der hies Trakle waida von der Walachei", in Cazacu, *Dracula*, 343; Laonikos Chalkokondyles, *The Histories*, vol. II, translated by Anthony Kaledellis, Cambridge MA-London: Harvard University Press, 2014, 369.

131 *Corpus Draculianum*, I/1, 148.

132 *Urkundenbuch zur Geschichte der Deutschen in Siebenbürgen*, vol. VII. 1474-1486, edited by Gustav Gündisch *et alii*, Bucureşti: Editura Academiei Române, 1991, 223-224.

133 *Ibid*., 252-253.

134 *Ibid.*, 269.

135 Attila Bárány, "The Hungarian Angevins and the Crusade: King Charles I (1301-1343)", *Zwischen Ostsee und Adria. Ostmitteleuropa im Mittelalter und in der Frühen Neuzeit. Politische-, wirtschaftliche-, religösiche- und wissenschaftliche Beziehungem*, edited by Attila Bá-

In the last decade of the 14th century, Wallachia faced the evergrowing might of the Ottoman Empire. According to late medieval sources, especially to the Bulgarian Chronicle, on 17 May 1395, during the Battle of Rovine, the Wallachians of Mircea the Old launched a hail of arrows ("that darkened the daylight") over the *gazi* warriors of Sultan Bayazid I (r. 1389-1402).[136] Some of the arrows might have been poisoned, like the ones shot by the loyalists of Voivode Vlad I the Usurper (r. March-December 1396) at the Hungarian host in a skirmish in the northern hills of Wallachia, in the summer of 1396.[137]

Later on, in 1418, Voivode Michael I (r. 1418-1420) promised to send one of his boyars at the head of an archer contingent to support his Transylvanian-Saxon allies in the market town of Heltau (today Cisnădie, Romania), located on the southern frontier of Transylvania.[138] Voivode Basarab II (r. 1442-1444) joined with a massive cavalry contingent the host of King Wladislas and John Hunyadi in the Long Campaign against the Ottomans, in the winter of 1443-1444.[139]

A similar contingent led Mircea, son of Vlad Dracul, in the Battle of Varna on 10 November 1444, during which the Wallachian horsemen used the typical tactics of steppe warriors, attacking, feigning retreat, and counterattacking the Ottoman battlelines. However, they didn't prove to be resilient, leaving the battlefield during the decisive counterattack of the enemy. It seems that this retreat was also caused by the fact that Sultan Murad remembered Mircea about his two younger brothers kept as hostages at the Sublime Porte.[140]

In 1445, the crusader fleet which sailed up the Danube to find King Wladislas (lost in the Battle of Varna), was joined by the light cavalry of Vlad Dracul and by the host of John Hunyadi. The Burgundian knight Walerand de Wavrin, one of the two commanders of the galley squadron, described the mobile tactics of

rány, Roman Czaja, László Pósán, Debrecen: Printart-Press Kft., 2023, 53-54.

136 Panaitescu, *Mircea cel Bătrân*, 240-248 (especially: 243-244).

137 *Documenta Romaniae Historica*, D, I, 154-158 (especially: 155, 157).

138 *Ibid.*, 202-203.

139 Nicolae Iorga, *Acte şi fragmente cu privire la Istoria Romînilor*, vol. III, Bucureşti: Ernest Leroux Éditeur, 1897, 11; cf. Michel Beheim, "This Poem Tells of King Pladislavo [Vladislav], King of Hungary and How He Fought with the Turks", Colin Imber, *The Crusade of Varna 1443-1445*, Aldershot-Burlington: Ashgate, 2006, 171.

140 Ibid., 177-178; also see the eyewitness report of the Franciscan friar Andreas de Palatio in *Codex epistolaris saeculi decimi quinti*, tomus II., edited by Anatolii Lewicki, Cracoviae: Typis Universitatis Iagellonicae, 1891, 459-469 (especially: 464-467); Anonymous, "The Holy Wars of Sultan Murad Son of Sultan Mehmed Khan [*Gazavatname*]", Imber, *The Crusade of Varna*, 94-104.

The Moldavian cavalry host in the second half of the 16th centry. This mural painting from the Sucevița Monastery in Moldavia, painted around 1590, depicting the host of Emperor „Pharaoh" chasing the Jews during the Exodus, is one of the few representations of the military realities in medieval Moldavia. Source: private collection Liviu Cîmpeanu.

the Wallachian riders, who even crossed the Danube on the back of their light horses.[141]

As shown above, in 1448, the Ragusan diplomat Pasquale de Sorgo saw in John Hunyadi's camp at the Danube 4000 Wallachian archers under the command of Voivode Vladislav II.[142] Unfortunately, this source did not reveal if these archers were on horseback or on foot but Antonio Bonfini states that the Wallachians and the Hungarians formed the light cavalry of John Hunyadi's host.[143] This statement seems reasonable since the Wallachian contingents that accompanied the former crusader host during the Long Campaign (1443-1444) and the Crusade of Varna (1444) were formed also composed of light cavalry.

In 1462, during Mehmed II's campaign against Vlad Dracula, the janissaries in the vanguard who crossed the Danube feared an attack from the Wallachian cavalry, so they dug earthworks, on which they placed wooden stakes and artillery.[144] This detail demonstrates that the Wallachian horsemen also used lances for charge and close combat.

Finally, on 8 July 1481, the mounted boyars and knights (*viteji*) of Brăila and Buzău supported their voivode Basarab IV against the Moldavian cavalry host of Stephan the Great in the fierce battle at Râmnicu Sărat, where even Hetman Şendrea, the latter's brother-in-law, remained on the battlefield.[145]

Based on these particular examples, we can conclude that the voivodes of Wallachia commanded a light cavalry host, very much like the Tatar and Ottoman raiders, equipped with little or no armor and armed with swords and lances for charges close battle and bows and arrows for the long-range combat. This statement is confirmed by the fact that several Wallachian rulers bought bows, swords, and other weapons from the Transylvanian-Saxons of Kronstadt in 1413,

141 Jehan de Wavrin, "Anciennes Chroniques d'Angleterre", Imber, *The Crusade of Varna*, 158, 162.

142 Whelan, "Pasquale de Sorgo", 138-139 (Latin), 142 (English); cf. Chalkokondyles, *The Histories*, II, 131, 133: Dan [= Vladislav II] "brought some eight thousand Wallachians to participate to this battle".

143 Antonius de Bonfinis, *Rerum Ungaricarum Decades,* tomus III. Decas III, edited by I. Fógel, B Iványi, L. Juhás, Lipisiae: B. G. Teubner, MCMXXXVI, 163.

144 Konstantin Mihailović, *Memoirs of a Janissary*, edited by Svat Soucek, translated by Benjamin Stoltz, Princeton: Markus Wiener Publishers, 2011, 66.

145 Cîmpeanu, *Cruciadă împotriva lui Ştefan cel Mare*, 55, 90, 195.

1422, 1424, 1431, 1432, 1432-1433, 1445,[146] 1474-1476, 1476, 1483-1484.[147]

Actually, the aforementioned Antal Verancsics stated in 1538 that the Transalpine Wallachians had no specific rules for their attire and weapons, which they have the same as the Turks because they shared common customs.[148]

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By the Late Middle Ages, both the king of Hungary and the lords of Moldavia and Wallachia had their military contingents of small landowners and mercenaries, similar to the private contingents of the barons and boyars of their realms. Unlike the prelates in the Kingdom of Hungary, the Orthodox clergy of the two extra-Carpathian voivodships does not seem to have had armed troops. Instead, the sovereigns of all the three realms could call to arms the noble levy, who fought under the flags of the territorial office holders (*ispánok* in Hungary, *pârcălabi* in Moldavia, and *județi* in Wallachia). If necessary, and only in extraordinary cases, the king and the two voivodes could also call the peasants to arms, but this was not a general mobilization, as claimed by the communist historiography, but a proportional recruitment, with a certain number of peasant households being obliged to send an armed fighter to the royal host. The situation is well documented in 15th and 16th century Hungary, and there are strong indications that the same system existed also in 15th-century Moldavia.

Regarding the military value of these troops, it has been rightly observed that in the case of Hungary in the second half of the 15th century, the knights of the royal household and the king's mercenaries represented the elite troops, along with the *banderia* of the prelates and barons, also consisting of retainers and mercenaries. The general insurrection of the noble counties was only in third place, and the *militia portalis* recruited in direct proportion to a certain number of tenant peasants (20, 30, 33!) was only in fourth place.[149] This scheme is roughly applicable to the realities in Moldavia and Wallachia, where the voivodes had knights (*viteji*) and mercenaries at their disposal, along with the contingents (*cete*) of the

146 *Documenta Romaniae Historica*, D, I, 198-201, 222-223, 223-224, 227-230, 230-232, 232-233, 276-278, 293-294, 296-297, 387,

147 Ioan Bogdan, *Documente privitoare la relațiile Țării Românești cu Brașovul și Țara Ungurească în sec. XV și XVI*, București: Institutul de Arte Grafice Carol Göbl, 1905, 121, 128-129, 189-190.

148 Wrancius, *Expeditions Solymani in Moldaviam*/*De Situ Trassylvaniae, Moldaviae et Transalpinae*, 40: *Transalpini nullis de re vestiaria aut militari legibus obnoxii omnia cum Turcis habent promiscua propter mutuam consuetudinem.*

149 Rázsó, "The Mercenary Army of King Matthias Corvinus", 126-127.

boyars made up of members of their retinue and perhaps also mercenaries. Last but not least, the voivodes could also call to arms the territorial boyars (from the *ţinuturi* in Moldavia and the *judeţe* in Wallachia), as well as the peasants, who were recruited proportionally, as already mentioned above.

One can state beyond any doubt that in the Late Middle Ages, the armed forces of the Hungarian Kingdom and those of Moldavian and Wallachian voivodeships used to be cavalry hosts. Throughout the centuries, the kings of Hungary tried to build up a core of heavy cavalry by creating barons in the 13th century and court knights in the 14th century and hiring foreign mercenaries in the 15th century. However, the bulk of the cavalry army of the Kingdom of Hungary consisted of mounted archers, who still used the old tactics of the Magyar warriors. A significant change occurred in the second half of the 15th century, when the traditional mounted archers were replaced by Serbian hussars armed with spears, shields, and swords, hired in large numbers by the Hungarian royalty. In less than 50 years, the horsemen of the Kingdom of Hungary adopted the weapons, light equipment, and tactics of the Serbian mercenaries, forming the renowned Hungarian hussar units employed by the mid-16th century in many of Europe's armies.

Unlike in Hungary, Moldavia's cavalry host consisted of mounted lancers, who used bows and arrows only occasionally. Thus, the Moldavian horsemen were very similar to the Serbian hussars, probably because of the Byzantine influence that came indirectly from the Slavic kingships of Halic and Volhynia, which adopted elements of the Byzantine (military) culture in the previous centuries.

Last but not least, the cavalry host of Wallachia consisted of mounted archers due to the assimilation of the political and military elite of the former Cumania in the first half of the 14th century. The proximity of the Tatars and then, from the end of the same century, of the Ottoman Turks forced the Wallachians to keep the weapons, equipment, and tactics of the steppe warriors, thus resembling, not by chance, the traditional mounted archers of the Kingdom of Hungary.

All in all, it can be said that the cavalry host of the Kingdom of Hungary, Moldavia and Wallachia proved to be very versatile, relying on speed and mobility, just like the *gazi* warriors of the Ottoman Empire.

Organisation, tactics and the role of the cavalry in the Polish-Lithuanian Commonwealth's warfare in the seventeenth century

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The Polish-Lithuanian Commonwealth, with its location at the crossroads of Western and Eastern Europe, was heavily affected by the ideas, traditions and customs of the neighbouring countries. One of the aspects, where such influences were the most visible, was in warfare. For centuries, both the Kingdom of Poland and the Grand Duchy of Lithuania relied on the cavalry as the crucial part of their armies. No surprise then, that when on 1 July 1569 both countries signed the Union of Lublin and created one joint state, their armies retained the cavalry-based character, while gradually evolving thanks to both external and internal influences. In order to better understand the structure and organisation of the Polish and Lithuanian cavalry in the seventeenth century, we need to first look into its evolution through the sixteenth century. Initially composed of heavy armoured lancers, supported by light horse archers and crossbowmen, the early 1500s had seen emergence of hussars (*husaria*), that arrived from Serbia and Hungary. At first, they were employed as light cavalry, equipped with sabre, light lance and shield, but fairly quickly, facing a wide range of enemies turning into the main shock cavalry, and gradually replacing the heavy lancers as the core formation. During the reign of King Sigismund II Augustus (from 1548 until his death in 1572) we can see hussars turning into main shock cavalry, gradually replacing heavy lancers in taking role of the core formation of the army.[1] The fairly short reign of Stephan Bathory, who ruled in Commonwealth between 1576 and 1586, led to reinforcing the role of hussars

1 More about evolution of hussars and their equipment, see: Tomasz Mleczek, 'Od wiktorii orszańskiej do bitwy pod Obertynem. Zmiany w uzbrojeniu husarii w 1. połowie XVI w.' in: *W boju i na paradzie. Husaria Rzeczypospolitej w XVI-XVII w.,* Warszawa, Arx Regia, Wydawnictwo Zamku Królewskiego w Warszawie – Muzeum, 2020, pp.19-39; Marek Plewczyński, 'Przezbrojenie husarii polskiej za panowania Zygmunta Augusta (1548-1572)', in: *W boju i na paradzie. Husaria Rzeczypospolitej w XVI-XVII w.*, pp.41-62.

as lance-armed shock troops, supported by medium and light cossack cavalry. During this period we can also see appearance of Western-style cavalry, armed with firearms, known in the Commonwealth under generic term reiters. Using pistols became very common amongst all units of cavalry from the early 1600s, with so called 'three firearms' (pair of pistols and 'long gun': carbine, bandolet, arquebus or short musket) very quickly becoming standard requirements in the recruitment letters for cossack cavalry and reiters. Through the first half of the seventeenth century, lance seems to be exclusively used by hussars. Half-lances and/or spears (known as *rohatyna*) were rarely used by other cavalry units, like *petyhorcy* that sometimes appeared in both Polish and Lithuanian armies. It was only from the 1670s that such weapons started to be widely used by units others than hussars; changed caused by the facing similarly armed Ottoman cavalry during the 1672-1676 war and from 1683 onwards.[2] Commonwealth's cavalry retained fairly unusual organisation and structure, that also affected units' role and place on the battlefield and during the campaign.

Organisation of the cavalry units

Through the first half of the seventeenth century, army units were divided into national and foreign, based on the way they were raised into service. Since the 1630s two contingents (*autoramenty*), based on the recruitment type, were officially introduced and such organisation was retained through the rest of the century. National *autorament* included hussars, cossack cavalry, *arkabuzeria* cavalry, Wallachian and Tatar light horse and the Polish-Hungarian infantry. Foreign *autorament* was composed of reiters, dragoons and foreign/German infantry. National units (except infantry) were raised in the retinue system, where noble known as companion (*towarzysz*) join the unit with his retinue (*poczet*) that included one or more retainers (*pocztowi*) that were treated as rank-and-file soldiers. Retinue also had some additional camp servants. Retinues could have different size, with those of officers tend to be larger but most retinues were fairly small, with two-three horses (so one companion and one or two retainers).

2 For more comprehensive studies of the Polish-Lithuanian Commonwealth's armies through the seventeenth century, see author's books published by Helion & Company as part of *Century of the Soldier 1618-1721* series: *Despite Destruction, Misery and Privations. The Polish Army in Prussia during the war against Sweden 1626-1629* (Warwick, 2020), *We Came, We Saw, God Conquered. The Polish-Lithuanian Commonwealth's military effort in the relief of Vienna* (Warwick, 2021), *Against the Deluge. Polish and Lithuanian armies during the war against Sweden 1655-1660* (Warwick, 2022) and *The Khotyn campaign of 1621. Polish, Lithuanian and Cossack armies against the Ottoman Empire* (Warwick, 2023).

Polish hussars from the beginning of the seventeenth century, from the Swedish copy of 'Stockholm Roll', presenting Royal entry to Cracow in 1605. Painter unknown. Original painting currently in collection of the Royal Castle in Warsaw.

Foreign troops were raised with the volunteers sought for by officers, both within and outside of the country, recruited via the 'free drum' method. Polish and Lithuanian cavalry units were formed into company-size banners (*chorągwie*), with their 'paper strength' varying from 100 to 200 horses. Reiters units were known as cornets or companies, grouped into squadrons and regiments; some units were raised as banners as well. Size of the units was always described in horses/portions (*konie*/*porcje*) but it was so called 'paper strength'. Between 10 and 15% of each unit were in fact 'blind portions' (dead pays), used as an additional pay for officers, so 100-horses banner normally wouldn't exceed 85 fighting men.

When raising the units, a letter of recruitment (*list przypowiedni*) was approved by the king and issued by the chancellery. It would normally state the name and rank of the chosen officer, type and size of the unit, details of quarterly or monthly pay and conditions of service – when and where the unit was to muster and for how long it was due to serve. We can also sometimes find the

details of the equipment required for the unit (both weapons and armour), although most descriptions are rather vague, stating just 'proper [winged] hussars equipment', 'typical cossack cavalry equipment' and so on. On many occasions, the recruitment letter did not even include any information on what armament was required, as it was treated as a common knowledge. A hetman could suggest suitable candidates for the rank of *rotmistrz* (officer in charge of cavalry banners) or foreign *autorament* officers. Some of them would be his political 'clients' or allies, other experienced soldiers that proved themselves in previous campaigns. There was always a certain degree of favouritism when nominating new candidates for the banner and regiment-level officers: many were supported in their bid by a magnate, high-ranking officials or even royal princes, who could write the recommending letter or even speak directly to the king about their suggestions. At the same time, there was a fairly large group of professional soldiers who tended to receive the commissions based on their experience and merits, not just thanks to the good word of their political patron. Sometimes, a hetman could received a recruitment letter with so-called 'windows' (*okienka*) without the name of a *rotmistrz*. Such a letter would have all the information about the type, strength and planned time of service of the unit, but it was up to the hetman to add the name of a suitable candidate and issue him with a full recruitment letter.

Many *rotmistrz*-level officers, especially those leading winged hussar units, were in fact only nominal in the position, held by wealthy nobles and important country or court officials. It was traditional, that official sources (like army musters) and even mentions in diaries were describing such units by the office held by its leading officer. So, for example, Stefan Czarniecki's units would be named as banners or regiments of the Voivode of Ruthenia, while Jan Sobieski's units from 1656 onwards would be the Crown Grand Standard-Bearer's units. Thanks to that, we can often find many units with the same *rotmistrz* or colonel, even when he was not taking part in the campaign. Because of this, the main job of recruiting of the banners was in the hands of the lieutenant (*porucznik*), who was a second in command of the unit and traditionally led troops during the campaign. The letter of recruitment was registered in the local court of the district he was planning (or was allocated) to raise the unit in. The letter was then added to the district's record, in a process called *oblatowanie*, which made it official. It gave the officer the right to look for volunteers and described the timeframe within which he should be creating the unit. Candidates for companions of the unit could be looked for in many different ways: from amongst people known to the officers (including their families and neighbours), former soldiers from pre-

viously disbanded units, to those from amongst local nobles looking for possible military careers. The recruiting officer could search for candidates during any gatherings or meetings of nobles; sometimes, his appeal for volunteers could be even read in the church during the Mass. Those that agreed to join the unit and were accepted, received some sum of money in lieu of the pay and had to provide their own retinue (*poczet*), composed of retainers called *pocztowi*. One of the companions was designated as the standard-bearer (*chorąży*), who would carry the unit's standard. Despite taking on such an important role, he normally was not treated as an officer though. In certain circumstances, the standard-bearer, even though he was not a ranking officer, could lead the unit in absence of the other commander, although it was a fairly rare occurrence Traditionally, in case of the absence of the *rotmistrz* and lieutenant, one of the companions was designated as deputy (*namiestnik*), who was in charge of the troops. The retinues in each banner were part of a *rolla*. It was the list of all retinues written down by the importance of the companions, so it starts with the *rotmistrz*'s and lieutenant's retinues, but the next place could be taken by a wealthier or somehow more important companion, not necessarily by the standard-bearer. It was all part of the rather delicate and often very confusing social structure of the unit, in which normally officers could only ask their soldiers to follow the orders since, as all officers and companions were nobles, they were (at least in theory) equal. A position in a banner's *rolla* could help in future promotions (e.g., to replace lieutenant or standard-bearer). The higher one was in the hierarchy, the better chance one had to become deputy or the unit's envoy sent to pick up and deliver the pay. We even read about the examples of the duels between companions fighting for a better place in the *rolla*.

The recruitment of reiters, foreign infantry and dragoons looked slightly different though. The colonel of the unit, known under the Germanized term *oberszter*, received a recruitment letter, but often such a regiment was allocated to the magnates and court officials, especially to those that were at the same time the *rotmistrz* of the hussar banners. As the equipping and keeping of those cavalry units in service was expensive, having at the same time the rank of the infantry or dragoon colonel – where the officer could claim some part of the unit's nominal strength as his pay ('dead pays') – was a way of rewarding him and providing some unofficial, yet well-known to everyone, way of reimbursement. Additionally, one-fifth from each soldier's pay was deducted towards the colonel's pay, such a process was known under the German name of *kopfgeld*. As with many cavalry banners, the recruitment and organisation of such units was handed over to the second in command, usually the lieutenant colonel (*obersz-*

ter lejtnant) or major. Typically, the colonel signed a special document called 'capitulation' (*kapitulacja*) with such an individual, in which they specified the conditions that the second in command would then recruit the regiment (e.g., special pay or the period of time within which a unit needed to be created). From then on, the lieutenant colonel took over and looked for lower-rank officers to help him create the regiment. It was up to each captain to raise their own company. In the first half of the seventeenth century, such units were usually composed of foreigners, mostly German-speaking but also Scots, English, Dutch and French. Gradually, foreign *autorament* started to be recruited locally in Poland and Lithuania, although many officers and NCOs were still foreign, mostly German-speaking. Volunteers for the service could be officially looked for only on the royal and church lands – it was forbidden to recruit from amongst peasants living on the owned land of magnates and nobles, although many fugitives from such areas ended up in the ranks anyway. Troops were recruited by the method of 'free drum', with officers leading the recruitment parties into the area designated in their recruitment letter and announcing a call-out for new soldiers.

National cavalry in both armies was grouped together into regiments (*pułki*), although such larger units didn't have the regimental staff like the one that could be found in foreign infantry, dragoons and reiters. The number and size of the cavalry regiments could change from campaign to campaign, i.e. banners could be moved between regiments or disbanded, new units could be added, etc. Some regiments had even up to 20 banners, while the smallest one could contain only two or three such units. As a rule, banner or banners that were under name of nominal commander of the regiment were always included in his regiment, i.e. Grand Hetman's hussars and *pancerni*/cossack cavalry banners served in his regiment. Light cavalry was likewise spread between different regiments but could be sometimes grouped within regiment where they made up majority of the banners.

Main cavalry formation

When describing the cavalry formation of the Commonwealth's armies, one always had to start with the hussars (*husaria*). It's worth to notice, that despite the fact that currently this formation is often called 'winged hussars', word 'winged' was not part of its Polish name during the seventeenth century. The hussars, in their role as a main 'shock' cavalry, were equipped with multiple weapons. In charge they were relying on the use of *kopia* lances as their standard armament. There was no standardized size of the lance, its length

varied from 4.5 to 6 metres. It was hollowed, made from two halves that were glued together and ended with steel point (*grot*). Once lance was shattered on the impact or had to be for some reason abandoned, soldiers would switch to their secondary weapons, depends on the situation and enemy that they were fighting against. It could be estoc (*koncerz*) or heavy pallasch, kept under the saddle[3] or most important weapon of each noble, sabre. In 1623 during the *Sejm* it was suggested that each hussar should be equipped with two pistols, preferably good quality Dutch ones, although there is enough evidence to prove that hussars used them earlier as well. Post 1620s they seems to be integral part of the hussars' armament. Bows and long firearms (like arquebus or even musket) were also part of their arsenal, although normally kept in the tabor wagon and used only during the defensive operations or sieges. Frequently used were also horseman-pick (*nadziak*) and hammer-axe (*czekan*), ideal for both fighting from the horseback and for drunken brawl in the camp. Through the majority of the seventeenth century, lance was seen as primary weapon of the hussars, although new trend appeared at the end of this period, when in 1689 Grand Hetman Jabłonowski ordered the retainers to abandon lances and use *bandolet* (carbine) as primary weapon. It was directly connected with facing the Tatars as their main opponents, as firearms were much more useful against them in 'small war'. In 1693 all the companions and retainers that were to serve in the fortress Okopy Świętej Trójcy[4] (today village Okopy in western Ukraine) were to be equipped with 'leopard [pelts], armour, arm-guards, with long firearm (…) on good horses [and] with brace of pistols'.[5] Such order is not surprising considering that the main role of this fortress was to block supply lines between the Turkish-held Kamianets-Podilskyi and Moldavia, where supply convoys were always escorted by the Tatars. Even when not equipped with lance though, the hussars were still well armed, with combination of melee weapons (sabre, estoc or pallasch) and firearms, making them formidable opponent in fights against the Ottoman and Tatar cavalry.

Through the first half of the seventeenth century, hussars tend to be deployed in large numbers, on many campaigns making significant part of the whole army. At Kircholm in 1605 they made half of the Chodkiewicz's force, at Klushino in

3 Sometimes hussars had them both, with estoc on the left and pallasch on the right side of the saddle.

4 Which translates as *Ramparts of the Holy Trinity.*

5 Jan Sowa, '"Ludzie niezwalczeni". Rejestry chorągwi jazdy autoramentu narodowego w Okopach Św. Trójcy, 1693-1695, *Studia nad staropolską sztuką wojenną*, volume II, Oświęcim, Wydawnictwo Napoleon V, 2013, p. 265.

1610 close to three-thirds of the Żołkiewski's army. In 1627, during war against Swedes in Prussia, Koniecpolski's army had 2,380 hussars, 3,550 cossack cavalry and 1,445 reiters. In 1633 the King Władysław IV's army, organised for the relief of Smolensk besieged by the Muscovites, had 3,200 horses of hussars, with 3,600 cossack cavalry and 1,700 reiters. This situation started to change for the worse with the start of the Cossack Uprising of 1648. All 14 hussar banners of the regular Polish army were destroyed during the initial phase of the conflict, at the battles of Zhovti Vody and Korsun. While the loss in manpower was not that high, with the majority of men taken prisoners and later returned to Poland, it caused large loss in horses and equipment. A vast recruitment of the district troops in the summer and autumn of 1648 was supposed to provide 2,500 horses of hussars, although not all of the units were raised on time. Those that took part in the campaign in the autumn 1648 were scattered after the battle of Pyliavtsi, again taking heavy losses in horses, weapons and armour. Both the regular army and private banners had a strong presence of the hussars in the defence of Zbarazh in 1649, but many soldiers died in the fights or succumbed to the illnesses ravaging the defensive force. The presence of hussars was also very important during the battle of Berestechko in 1651, although by then the hussars were already vastly outnumbered by both the *pancerni* and cossack cavalry in a 1:6 ratio. The defeat at Batoh in 1652 was the most severe blow to the Polish army. Many officers and soldiers were killed in battle, with thousands more massacred after they were taken prisoner. At least 8,000 men were lost, the majority of them experienced soldiers. Many units of the Polish army were wiped out and never rebuilt, amongst them eight banners of hussars. No surprise that the post-Batoh, presence of the hussars in the Polish army was much reduced, with only five banners, averaging in total between 800 and 900 horses, present until 1654. By the spring of 1659, the Polish army only had six banners, with a total paper strength of 999 horses. During the late 1640s and the early 1650s, 'corps' of the Lithuanian hussars were varying in size but rarely exceeded 1,000 horses. Despite their small number, hussars were still playing an important role during the whole 1655–1660 war against the Swedes and the conflict with the Muscovites between 1654 and 1667. As the iconic and elite units, they were the linchpin of the cavalry, serving as both the shock troopers and 'morale booster' for the other troops. Service in their ranks, despite the large expenses that were connected with it, was often a good way for opening one's career in the military and civil service; it also played important role in building a net of connections between magnates and nobles. In 1667, at the end of the conflicts with Sweden and Muscovy, the Polish army still had only six, while the Lithuanian just five

Hussar and two cossack cavalrymen during the war against Swedes in Prussia in 1627. Abraham Booth, *Journael van de Legatie in Jaren 1627 en 1628*, Amsterdam, 1632. From the collection of the National Archive in Gdańsk.

banners. War against the Ottomans, waged in the period 1672-1676, brought the increase in number of this formation, as it was seen as a crucial element in the fight against the Turkish cavalry and infantry. In 1672 Poland had already 11, while Lithuania dropped slightly to five. Gradually Polish 'corps' of hussars was strengthen by upgrading existing units of cossack cavalry/*pancerni*, so at the end of the war in 1676 there were 21 banners in service. Lithuania, with much smaller army, retained steady number of five banners. In 1683, as a part of the reorganisation of the army in preparation for the relief of Vienna, the number of Polish units was increased to 26 and Lithuanian to six banners.

Through the seventeenth century, hussars tend to fight in the two ranks, with companions placed in first one, although some accounts mentions deploying in three ranks as well. As hussars were shock troops, relying on the impact of the charge and long range of their lances, they were gradually increasing speed of their attack, starting with the lances held up and usually lowered mid-way to the enemy. While they could be deployed in fairly loose ranks, especially when facing heavy firepower, charge itself was performed in closed rank, 'knee to knee'. When possible, especially early in the seventeenth century, hussars were grouped together, forming squadrons that could be used as an 'armoured

fist' during a charge. In 1660, during the battle at the river Basia fought against the Muscovites, the combined Lithuanian and Polish army deployed nine banners of hussars. They were grouped into three squadrons of three banners each, additionally supported 'behind each squadron' by a *pancerni* and cossack banners.[6] Royal Prince Jakub Ludwik Sobieski that took part in the campaign of 1683 mentioned practice of joining hussars and *pancerni* into combined squadrons. King Jan III 'mustered his hussars [banner] and other that were looking at it were told to do what he ordered; dividing them into two ranks, with first one moving slowly in close order, where [soldiers'] feet were touching each other and with two banners of *pancerni* joining them: they marched in this way and cover large ground'.[7] Such tactic was also mentioned by Philipe Dupont, who served in Polish army.[8] It was technique used previously during the 1672-1676 war against Turks and Tatars, with banner of hussars having banner of *pancerni* on each flank. Thanks to such deployment, the hussars received additional fire cover from the attached *pancerni,* while the latter could expand on the success of the lance-armed hussars and more effectively utilise their own combination of weapons.

Next to the hussars, the cossack cavalry was the second main cavalry formation in both Polish and Lithuanian armies. Originally, this cavalry was called *jazda kozacka* (cossack cavalry), with its soldiers being known as the *kozacy* (written in lowercase). It was a term used to describe free men 'serving for money' and was adopted for both military use and to name household servants, often mounted. In the sixteenth century, the word started to be used to describe free men settled in Ukraine near the Dnieper River, but these men were called '*Kozacy*' (written in uppercase). As such, in the original Polish texts, one could find both *kozacy* and *Kozacy* serving together in the one army. Obviously, it made it very confusing when translating such sources into English, when normally one form – Cossacks – is being used, leading to many errors in identifying who is in fact described in the original text and attributing many military features of the Polish cossack cavalry to the Zaporozhian Cossacks.

Initially it was mostly light cavalry, often unarmoured, armed with bows, firearms and sabres, that played support role to the hussars. Additional hand

6 Jan Chryzostom Pasek, *Pamiętniki*, Warszawa, Państwowy Instytut Wydawniczy, p.159.

7 Jakub Ludwik Sobieski, *Dyaryusz wyprawy wiedeńskiej w 1683 r.* Warszawa, Teodor Wierzbowski (ed.), 1883, p. 9.

8 Philipe Dupont, *Pamiętniki history życia i czynów Jana III Sobieskiego*, Warszawa, Muzeum Pałacu Króla Jana III w Wilanowie, 2011, p. 196.

weapons, like pallasch, estoc or horseman's picks were used as well. Cossacks were used as reconnaissance troops, to harass the enemy, engage in the pre-battle skirmishes; they also often took part in the long distance raids and even served in the garrisons. While sometimes their units could be better armoured with the mail and *misiurka* helmets, also with the Eastern-style shields (*kałkan*), such equipment varied from the banner to banner, even from the retinue to retinue. While as early as in the 1620s so called 'three firearms' were normally required as standard weapons for the cossack cavalry, it was not something that was regularly checked, so often even within the retinue, not to mention the whole banner, there could be combination of bows (especially for companions) and firearms. As it was often the case with national cavalry, both Polish and Lithuanian, all depends on the wealth of individual companion, who had to purchase the whole equipment for himself and his retinue, leading to such wide range of weaponry being used.

From 1648 onwards, the new sub-category of the cossack cavalry emerged. Known as *pancerni* (which means 'armoured'), their soldiers are normally associated with using mails and *misiurka* helmets in the whole unit, while their weapons were the same as those already mentioned with the rest of the cossack cavalry. The myth which is often associated with *pancerni* is that their name was introduced in 1648 for all cossack cavalry, to differentiate both Polish and Lithuanian cossack cavalry from the Cossack rebels. Such theory cannot be confirmed in the primary sources though, as the muster rolls and payroll documents continued using term cossack cavalry. During the 1650s and 1660s, term *pancerni* was used to name only some of the banners of cavalry, normally those that we could call the 'elite': serving under the name of King, Hetman or wealthy magnate. Their nominal commander could potentially support his men in obtaining better armour and weapons. Also, as they often were used as guard of honour (i.e. during the ceremonies), it could be expected from them to be equipped in the more standardised way. On the other side though, almost constant warfare between 1648 and 1663, took an enormous strain on soldiers and the way the were able to equip themselves, so its highly likely that such early *pancerni* banners were not uniformly clad in mail as one could imagine. The bigger change was brought by war against the Ottomans 1672-1676. Not only all cossack cavalry in Polish (but not Lithuanian) army was started to be called *pancerni*, but they were also – at least on paper – required to use mail and be equipped with spears. This trend continued through the rest of the seventeenth century, with the mail-clad *pancerni* often use as shock troops, as thanks to spears they were able to better support the lance-armed hussars.

Another sub-category of cossack cavalry were *petyhorcy*. They appeared in the late sixteenth century, recruited from amongst the Circassians migrating from the Caucasus to Lithuania. They seems to be equipped with spears or short lances, also with mail. They were present in the fairly small numbers in both the Polish and Lithuanian armies in the early seventeenth century, always mentioned as equipped with spears. They disappeared from the army establishment in the early 1630s, to return to Lithuanian army in 1661. They become prominent in this army since 1673, filling gap between hussars and *pancerni*/cossack cavalry. Their main weapon through the rest of the seventeenth and beginning of the eighteenth century was half-lance, shorter than one used by hussars. Some units could use spear instead, there is also evidence of banners lacking such weapons and subsequently treated as *pancerni* units.

For the first half of the seventeenth century, the light cavalry was not established as separate formation within the regular army. Cossack cavalry were used in the role of light horse instead, with – especially in the Lithuanian army – many of its banners composed of the Tatars. It often led to the situation when unit was known as the 'cossacks-Tatars', term that was even still utilised in the 1650s. Individual units of the Hungarian, Tatar or Wallachian light horse were noticeable in the private armies though, often recruited from amongst the mercenaries or even settlers living on the magnates' lands. Things changed rather drastically from 1648 onwards, when high losses of the Polish army during fights against the Cossacks and their allied Tatars – especially in the early stages of uprising and then in 1652, after the battle of Batoh – led to look for quicker and cheaper ways to raise and maintain larger number of cavalry units. As such, specially designated light cavalry, under name of the Tatar and Wallachian banners, started to appear in the larger number in Commonwealth's ranks. The Wallachians were almost exclusively present in the Polish armies, while the Tatars were light horse of choice in the Lithuanian ones, although many units were part of the Polish army as well. At the first glance, units of both those formations looked very similar, as they tend to have the Polonised clothing, lacked the armour, and used the smaller, swifter horses. While the Tatars preferred bows and the Wallachians often used firearms, in itself it was not exclusive and within the one banner there could be a complete mix of weapons. Short spears started to appear during the 1670s, so it is probable that they continued to be used during war with the Ottomans after 1683. At the same time, the light horse had specific duties: reconnaissance, protecting the army during marches and at the camp, harassing and skirmishing against the enemy, so spear was not their preferable weapon of choice. As any other cavalry, such horseman used sabres and could

have additional hand weapons, like axes or hammers. By the second half of the seventeenth century, pistols were already well established as a standard weapons, although in some units, especially those recruited from amongst the Crimean Tatars, there could be significant lack of those.

Western-style cavalry came to Poland from Germany, that is why it was often called 'German'. The Poles did not differentiate between cuirassiers and harquebusiers, calling all such cavalry reiters. In the first half of the seventeenth century, reiters in both the Polish and Lithuanian armies were expected to be equipped with armour. In 1635 Charles Ogier, who has seen Polish reiters in Prussia, mentioned that they were fully armoured.[9] Hussars that served without *kopia* lances, were known to be fighting 'in reiter style', indicating that the armour was strongly associated with this formation. As there was no detailed specification of what consist of such armour, within the units (banners or companies) there was probably rather wide mix of different types, from ¾ cuirassier armour of the wealthiest officers and soldiers, to the breastplate or even just the helmet of the poorest one. The weapons were 'three firearms' (pair of pistols and 'long gun': carbine, *bandolet*, arquebus) and sword or sabre. From the 1650s, armour was probably less commonly used, replaced with the buff coat. As reiters were of no great use against the swift Tatar horsemen, they were rarely employed as a part of the standing 'quarter army' in the early seventeenth century. Their units were used against all other opponents though, where they were utilised as both fire support and shock troops – even as last as in the 1660s, during campaigns against Muscovites. Reiters were especially valued in the Lithuanian army, where they bridge the gap between the hussars and cossack cavalry as a sort of 'jack-of-all-trades' cavalry: used in the reconnaissance missions, as a melee cavalry and even as a garrison forces. Polish kings tend to have unit of reiters as the part of their Guard units: from one company during the reign of Sigismund III to a large regiment of John II Casimir during the 1663/1664 campaign in Muscovy. Reiter units tend to be a mix of nationalities, especially depending on period during which they served. In the first three decades of the seventeenth century, we can find mostly German units, usually recruited in Livonia, Courland, Prussia and in Silesia. Alongside them though, there were also companies of Walloons and French. Gradually, number of Poles and Lithuanians in such units started to grow, although through the rest of the century there was still large presence of the German-speaking soldiers, includ-

9 *Karola Ogiera dziennik podróży do Polski 1635-1636*, part I, Gdańsk, Biblioteka Miejska i Towarzystwo Przyjaciół Nauki i Sztuki, 1950, p.271.

ing former Swedish ones during the 1655-1660 war, serving as both officers and a rank-and-file. While the majority of units were recruited through the 'free drum' method, some companies – especially in Livonia – were raised just like national cavalry, with companions and their retinues. Some even had unique hybrid form, with retinues grouped into corporalships.

Besides those main cavalry formations, there were of course others, either those unique to just the part of the period or those that were mix of some already mentioned. Typical example of it is so called *arkabuzeria*, formation unique to Poland and rather unusual blend of 'Eastern' and 'Western' influences. Documents written in Latin usually use for it the term *Equitibus harkabuseris* or *Arcabuseros.* In the first half of the seventeenth century it was normally fielded as a heavy cavalry, well armoured in the way of Western European 'full' cuirassiers but recruited in the same way as the native Polish cavalry. Curiously enough though, they were also equipped with harquebuses/carbines, just like the lighter Western harquebusiers. Szymon Starowolski described them as equipped with 'iron armour and helmets'[10] and 'armoured as good as hussars'[11] We can think about them as some sort of the hussars without lances (and wings), also they were definitely treated by the Polish nobles as an elite formation. In August 1627 local assembly of Poznań and Kalisz' Voivodship, announcing that nobles from this area should prepare themselves to defend their land from the ex-Danish soldiers, mentioned that 'we, the citizens, should be all ready to fight, those [serving] as hussars with horse, armour, lance, pallasch, caliver [*rusznica*] and sabre; [while] those [serving] as *arkabuzeria* [with] brace of pistols, musket or carbine, pallasch and sabre'. Some units were recruited, especially in Wielkopolska, during first years of Khmelnytsky Uprising but disappeared from the army by 1655. In the 1660s name was reintroduced as a 'cover up' for a few units of reiters that remained in the Polish army. Masses of nobility were strongly against employing the Western-style cavalry, seeing in them, alongside the other foreign troops, the element that can be used by the royalty in their struggle against the nobles. During the reign of Jan III Sobieski few units of *arkabuzeria* were still part of the Polish army, although even the King himself tend to call them reiters in his letters, clearly indicating what type of the cavalry they became.

In the situation when the country was in the serious danger – like facing the

10 Szymon Starowolski, *Polska albo opisanie Królestwa Polskiego.,* Warszawa, Wydawnictwo Literackie, 1976, p. 112.

11 Szymon Starowolski, *Eques Polonus*, Venice, 1628, p. 39.

full Ottoman's might in 1621, the Muscovites in 1654 and the Swedes in 1655 – the King, with approval of the *Sejm*, could order raise of the levy of nobility (*pospolite ruszenie*). In theory, it was composed of the all able-bodied nobles in the land, who, depending on their wealth and standing, would arrive on their own or with their retinues. Additionally, all royal towns were to supply a levy of infantry, paid for from their own coffers. Even during the time of peace, nobles in each voivodship and land were obliged to take part in the musters, usually the annual ones, where they were to be counted and checked. Despite the old regulation that required them to be armed with the lances (*hastatus*), in reality equipment of the nobles varied greatly. Most were arriving mounted and with the different weapons, although the poor ones could even show up on foot or barely armed. They were then grouped into banners, with some prominent nobles chosen as *rotmistrz* and all units from one region including into one regiment (*pułk*). By the mid-seventeenth century, the majority of nobles were serving 'in cossack cavalry style', although most likely with a rather large variety of equipment and weapons. Some could still afford to arrive as the hussars; others could serve as *arkabuzeria*, reiters or even *petyhorcy*. As such, even within the one banner, there could be nobles armed and equipped in completely different way, although all of them tend to fight in the similar way to cossack cavalry. Numerous volunteers (*wolontarze*) and noble partisans, especially common during the 1654-1667 war, were fighting as mounted units, that could be placed somewhere between the cossack cavalry and the light horse. Such irregulars specialised in 'small war' against the Muscovites and the Swedes, at the same time being of low use during the pitched battles. What's more, as many other irregulars, they were often huge menace to the local population, to the extent that once campaign ended, they often had to become a target of the punitive action of the regular troops.

Tactics and the role on the battlefield

The tactics of the Polish and Lithuanian cavalry were initially highly influenced by the sixteenth century conflicts against the Muscovites and Tatars. Warfare against those two nations required army with high percentage of cavalry, to able to face off numerous horsemen deployed by the opposite site. It led to establishing hussars as the main shock cavalry, that had to be able to attempt long and swift marches (i.e. to intercept the Tatar raids on the border), could swiftly redeploy on the battlefield and, by using large range of different weapons, was able to face different circumstances and variety of opponents. Cossack cavalry

initially played mostly auxiliary role: from the fire support, through the reconnaissance missions, to pursuing the defeated enemy. As such it had to be able be used as both 'line' cavalry, deployed on the battlefield as a direct support of the hussars and as the light cavalry, often just used in the initial and final phases of battles, once the hussars dealt with the main enemy force. During the series of conflicts against Sweden, cavalry still played important role, both during pitched battles and 'small war' but had to develop much closer cooperation with the infantry and dragoons. Through the second half of the seventeenth century, roles played by both those main formations started to change. Hussars were still the main shock cavalry but due to their decreasing number, tend to be kept as the reserve force or used for the breakthrough charges only. Cossack cavalry and *pancerni*, also from the late 1660s *petyhorcy* in Lithuanian army, had to bear the brunt of the cavalry fight. It explains emphasis on equipping soldiers with firearms and mail, also - from the 1670s - with spears. Post-1648, emergence of the specialised Tatar and Wallachian banners meant that the cossack cavalry could be less often used in its previous role of the light cavalry, as newly established formations could now focus on such tasks. Western-style reiters, with their armour and firearms, were especially sought for when fighting against the Swedes in Livonia and later in Prussia. While less useful against the swift Tatars horsemen on the southern Polish border, they showed their worth when fighting against the Cossacks and, from 1654 onwards, against the modernised Muscovite army. While cavalry as a whole still composed the large part of both the Polish and Lithuanian armies during the 1654-1667 wars against the Swedes and the Muscovites, it had to be heavily supported by the infantry and dragoons. New series of conflicts against the Ottomans and the Tatars (1672-1676, 1683-1699) lead to increase in the number of the hussar units, as Jan Sobieski (both as Hetman and later as King) utilised it as a crucial part of his battlefield tactics. He placed high emphasis on equipping his cavalry with lances (hussars), half-lances (*petyhorcy*) and spears (*pancerni* and light horse), in order to increase their striking power when facing the Ottoman horse.

While tactics and role of the hussars was already described in more detail in previous part of this article, in further parts I would like to look into the other, less known formations, to see how they were utilised on the battlefield. Polish sources do not tell us much details regarding tactics used by cossack cavalry during their fights. We usually read about 'hitting the enemy', 'giving fire' but also 'retreating while fighting', which could indicate that the feigned flight was often used. After all it was tactic commonly used by the Turks and Tatars, with the latter being frequent opponent of the Polish army. Cossacks cavalry was

Erik Dahlbergh's sketch of the battle of Wojnicz in 1655, with the fight between Polish and Swedish cavalry. From the collection of Riksarkivet in Stockholm.

also ideal for the skirmishing, especially during the initial phases of combat, when so called 'single combat' (*harce*) between individual cavalrymen was fairly common. During the pitched battles they would be often accompanying hussars' charges, providing the fire support and looking for a chance to chase after broken or retreating enemy. Diarists-soldiers serving during the 1650s and the 1660s, like Jan Chryzostom Pasek and Jakub Łoś, spent their whole military career in these formations but they did not write that much about the tactics of *pancerni* and cossack cavalry in the battles. They used fairly generic terms, like 'we charged the enemy' or 'we strike them down'. As already mentioned, when writing about the hussars, *pancerni* and cossack cavalry banners were in some circumstances used as a support for hussars' squadrons, following them on the battlefield. It seems that by the 1650s, the battlefield tactic of *pancerni* and cossack cavalry was not that much different from the Western-style cavalry, like the Swedish *ryttare* or Imperial cuirassiers: giving fire from pistols just before closing in for the melee. One of the accounts describing the battle of Chudniv in 1660 added that the banners of cossack cavalry were providing fire support to the hussars: while the latter retreated after the charge, the former attacked the Muscovites, 'giving fire from their handguns' and softening the enemy against

the new charge of the hussars.[12] Poczobut Odlanicki described in 1664 two Lithuanian cossack cavalry banners that, while facing the Muscovites reiters, charged at them and engaged in an exchange of fire. When forced to retreat, soldiers reload their firearms and, supported by further banners, charged again.[13] Organisation of the banners and size of retinues indicates though, that, as with hussars, cossacks and other similar cavalry were deployed in two, maximum three ranks. From the 1670s, with their varied range of armament, *pancerni* were in fact rather universal formation, as they could act as a shock cavalry employing their spears, as a fire support with bows and firearms or even as a skirmishers, engaging the Turkish and Tatar horse. While *petyhorcy* seems to be slightly more specialised, being seen as 'light hussars' when using lances, they could of course be employed in the same way as *pancerni.*

The light cavalry tended to be deployed on the flanks of the Polish and Lithuanian armies, where it could harass the enemy's cavalry using typical hit-and-run attacks and, if the battle was won, be thrown after the enemy in the pursuit. We can often find such Tatar and Wallachian banners sent out as the vanguard of the force, leading reconnaissance missions normally known as *podjazd*. They were also routinely employed during the raids against the enemy's logistic lines and territories, where they could employ the terror tactics of burning, looting and – if the opportunity arose – destroying smaller outposts. On some occasions, they would fight in the same way as cossack cavalry: first shooting at the enemy with bows and firearms, then closing in with sabres in hand to engage in hand-to-hand combat. Both types of the light horse employed similar tactics on the battlefield, fighting in loose formation as skirmishers, relying on shooting as their favourite method of engaging the enemy. While from the mid-1670s banners of such cavalry were required to have spears as part of their equipment, it is possible that many units were not using them, relying more on hit-and-run tactics than attempts of engage the enemy straight on. The light horse could provide screen to other formation of the cavalry and cooperate with the infantry and dragoons in preparation of ambushes, like during battle of Lesienice (also known as battle of Lviv) on 24 August 1675, where the Wallachian banners engaged the Tatars attempting to outflank the Polish-Lithuanian army. Of course the most crucial role was the one of 'eyes and ears' of the army, with banners

12 Grabowski (ed.), *Ojczyste spominki w pismach do dziejów dawnej Polski*, vol. I, Kraków, Nakładem Józefa Cypcera, 1845, p.157.

13 Jan Władysław Poczobut Odlanicki, *Pamiętnik Jana Władysława Poczobuta Odlanickiego (1640-1684)*, Warszawa, Drukarnia Michała Ziemkiewicza, 1877, p.73.

being regularly despatched for the reconnaissance missions, serving as pickets and on convoy duties. As such, the light horse banners were very active during the 1680s and 1690s, being constantly employed during the campaigns against the Turks and Tatars.

We do not know much about the tactics used by Polish and Lithuanian reiters. They were often used as a fire support for hussars and cossacks, but it appears that they were often thrown into the melee as well. Swedish drawing of battle of Walmozja in 1626 shows Lithuanian reiters deployed, in the same way as hussars, in two ranks, which could indicate that they were used in more aggressive way, just like other types of Eastern-type cavalry. During the late stage of battle of Gniew (Mewe), on 1 October 1626, Henryk Szmeling's banner of 200 reiters 'struck mightily on the enemy, five times retreating and attacking again, finally forcing the enemy to retreat'.[14] While it could indicate that unit was employing caracole (retreating and attacking again), it appears that reiters were also engaged in hand-to-hand combat. Due to their position in the army, reiters seems to be very universal troops, fighting as both main shock cavalry alongside hussars (in the 1660 campaign on Ukraine) and as a reconnaissance force, especially in the Lithuanian armies during the number of campaigns in Livonia. The important role of reiters providing fire support can be seen during the battle of Zboriv in 1649, when reiters stopped the Crimean Tatars chasing the retreating Polish cavalry by 'standing firm and shooting at the enemy with their firearms'.[15] Christian Holsten in his diary confirms that the Polish reiters were not shy of striking into hand-to-hand combat, as the German mercenary often mentioned being engaged in direct fight. During the campaign of 1660, he lost four horses in battles: three of them being shot and one being 'mortally wounded during melee'. The reiters in his diary 'were shooting and striking with sabres' in combat, taking heavy losses during a fight within the Cossack camp. He added that the regiment he served in was pushed back by defenders using 'firearms, spears, bows, scythes, staffs and even [cart] stanchions'. The company standard that he was carrying had a 'few cuts and shots', again showing that the unit was right in the centre of the fight.[16] During the battle of Chudniv in

14 Archiwum Państowe w Gdańsku, 300/53/48, *Diariusz Wojny Pruskiej z roku 1626,* pp.370-371.

15 Mirosław Nagielski (ed.), *Relacje wojenne z pierwszych lat walk polsko-kozackich powstania Bohdana Chmielnickiego okresu "Ogniem i Mieczem" (1648-1651)*, Warszawa, Wydawnictwo VIKING, 1999, p.223.

16 Hieronim Chrystian Holsten, *Przygody wojenne 1655-1666*, Warszawa, Instytut Wydawniczy Pax, 1980, pp.54–60.

the same campaign, reiters were part of the force of Polish cavalry that 'struck with great fury' into the Muscovite and Cossack tabor, breaking into it. Holsten wrote about the confusion of the ensuing fight, during which all armies were mixed: 'Muscovites, Cossacks, Tatars, Poles, German and Wallachians. We were deafened by a huge scream, the noise of cannon and muskets; blinded by a fury, dust and shining sabres. We barely could recognise friend from foe. And we fought like this for nearly four hours, none of the [fighting] side wanted to retreat before dusk.'[17] In 1663 Antoine de Garmont mentioned that the reiters of the Royal regiment fought, next to light cavalry (which seems to in fact include cossack cavalry), so fiercely that 'the enemy had to give way to the Polish sabre'.[18]

Numerous early sixteenth century campaigns led to developing so called 'old Polish custom', cavalry-based tactic relying on mix of heavy and light cavalry, working in unison to weaken the enemy and then break its lines with lance-armed charges. It was a fusion of the medieval-style tactics of heavy cavalry with the tactics of bow-armed Tatars horsemen. During the seventeenth century (especially its first half), Polish and Lithuanian commanders during the battles tend to focus on the decisive charge on one of the flanks. Their aim was to engage the enemy in the centre and on other flank, while one strong wing – often locally outnumbering its enemy – was to break through its direct opponent and to then proceed to outflank the remaining opponents. Such important charges were always undertaken by the hussar banners, sometimes accompanied by reiters and cossack cavalry. Crucial part of this tactic was to always keep the strong reserve, that could be used to reinforce the weaking part of the main line or as an additional striking force. It led to many successes during the first decades of the seventeenth century, especially during the 1600-1611 war against Sweden and Times of Troubles, including battle of Kircholm in 1605 and at Klushino in 1610 when facing the Swedes and the Muscovites. Such 'hunger for battle' was typical for both Polish and Lithuanian commanders of the era, as they relied on the decisive battle that could destroy the large part or the whole enemy army. It also comes from the main weaknesses of their own armies: the Commonwealth's troops were often outnumbered, serving for the significant time without pay and prone to mutiny during the long campaigns waged in difficult conditions. As such, their officers wanted to quickly destroy the enemy

17 Ibidem, p.61.

18 Antoine de Gramont, *Iz istorīi moskovskago pokhoda Ìana Kazimira, 1663-1664 g.g.*, Yuriev, Tipografia K. Mattisena, 1929, p.24.

and gain control of the contested territory. Even when deploying the army in defensive fashion, strong cavalry reserve tend to be used as a counter-attack force, like at Cecora in 1620 and Khotyn in 1621. Through the second part of the seventeenth century, those tactics had to change and take under the consideration development of both the enemy (especially the Swedish army and the Cossack-Tatar alliance) and the evolution within its own rank (more important role of the infantry, appearing of dragoons, decreasing availability of hussars). Still, as its core, the Commonwealth's army trusted the cavalry to play the most decisive way in the battle and to open the way to the victory. Stefan Czarniecki, with his emphasis on 'small war' and utilising light cavalry to harass Swedish horse, still tend to favour charge of strong wing (usually led by royal regiment, including some hussar banners), which can be clearly seen during this campaign in 1660 against the Muscovites. Jan Sobieski, both as the Hetman and as the King, while seeing great potential of the combined arms and ensuring that his army is well supported by the infantry and dragoons, spent lots of effort on increasing the numbers of hussars, seeing them as the crucial cavalry when facing the Ottomans. As evidence from Khotyn in 1673 and Vienna in 1683 shows, his assumption was correct, as well trained and well led lance-armed cavalry could be still used with much success against the Ottoman forces. Through the whole seventeenth century, cavalry warfare made huge impact on the Polish and Lithuanian society, being closely associated with ethos of the noble fighting in the defence of his country. While the 'winged hussars' became most visible and easily recognise element of those armies, it is worth to remember that the organisation and structure of the cavalry in the Polish-Lithuanian Commonwealth was much more complex and strongly mirrored the multi-cultural aspect of the joint state.

Rembrandt (1606-1669), *The Polish Rider*. Possibly a Lisowczyk on horseback (1655). It has been assumed that the person portrayed was the Grand Chancellor of Lithuania Marcjan Aleksander Ogiński (1632-1690). Frick Collection, Upper East Side, Manhattan, New York. Wikimedia Commons.

Hussars, lancers and dragoons:
the evolution of cavalry warfare in the Principality of Transylvania (1541-1690)

Florin Nicolae Ardelean[1]

Introduction

Antun Vrančić (Antonio Veranzio), a Croatian humanist and diplomat who had spent many years in the service of Hungarian Kings, made an interesting observation regarding the evolution of cavalry in Hungary and Transylvania from the fifteenth to the sixteenth century. Describing the customs of the Transylvanian nobility, Vrančić claims that their manner of going to war had suffered a significant change in the beginning of the sixteenth century, as a consequence of the wars against the Ottomans:

> The greatest glory is to knock down your enemy from his horse with a lance. They (nobles) go to war on horseback; a long time ago they were all heavily armoured (*olim omnes cataprachti*) but now they are all light cavalry (*nunc omnes velites, leviter armati*). There is no doubt that they have taken this custom from the Turks. During the times of King Mathias (Mathias Corvinus 1458-1490) the use of heavy cavalry was wide spread and brought great success. Under Vladislav (Vladislav II Jagiello of Hungary 1490-1516) and his son Louis (Louis II 1516-1526) they began to lose their importance and after the disaster of Mohács (1526) they almost disappeared from the ranks of the army. Their place was taken by those who in the common language are called hussars (*quos vernaculo sermone Hussarones appelant*) with their swift Turkish horses[2].

Of course, it can be argued that Vrančić's statement is somewhat inaccurate. Light cavalry had a long tradition in the armies of the Hungarian Kingdom even

1 Babeş-Bolyai University, Cluj-Napoca, Romania.

2 Antonius Wrancius, *De Rebus Gestis Hungarorum ab Inclinatione Regni*. In László Szalay ed. *Monumenta Hungariae Historica: Scriptores*, vol. 2., Pest: Magyar Tudományos Akademia, 1857, 149; Maria Holban ed. *Călători străini despre* Ţările *Române*, vol. 1, Bucureşti: Editura Ştiinţifică şi Enciclopedică, 1973, 416.

before their first encounters with the Ottomans[3]. Throughout the Middle Ages, nobles from Transylvania and from the other provinces of the Realm of Saint Stephen were indeed expected to perform military service as heavy cavalry but not all were able to procure the mounts and expensive equipment[4]. There is also ample evidence that the hussars had already began to play a major role in the composition of the Hungarian army, especially from the second half of the fifteenth century[5]. Nevertheless, the observation of the Croatian humanist is correct in noticing the significant change of proportion between heavy and light cavalry. Throughout the sixteenth century, the defensive equipment of mounted soldiers became lighter and the Ottoman influence on this particular process was indeed very strong. It also indicates the preference for Turkish horses, with a smaller frame but fast and resilient.

After the Ottoman conquest of Buda in 1541, Transylvania and some other territories from the eastern parts of the Hungarian Kingdom were gradually transformed into a new state, the Principality of Transylvania[6]. Vassals of the Ottoman sultan, the rulers of the principality were caught up in the struggle between their liege lord and the Habsburgs who never gave up on their ambition to rule all the territories which once belonged to the Crown of Saint Stephen. In spite of its modest size and resources, Transylvania was not merely a "buffer state" between the two great empires. Some of its rulers had great ambitions and successfully claimed the title of Hungarian King (Stephen Bocscay and Gabriel Bethlen)

3 On the importance and evolution of light cavalry in the Kingdom of Hungary, see János B. Szábo, *A honfoglalóktól a huszárokig: a középkori magyar könnyűlovasságról*. Budapest: Argumentum, 2010.

4 Martyn Rady, *Nobility, Land and Service in Medieval Hungary*. Basingstoke: Palgrave, 2000, 146; Joseph Held, "Military Reform in Early Fifteenth Century Hungary." *East European Quarterly*, XI: 2 (1977), 132.

5 János B. Szábo, "Hussars." In Clifford J. Rogers ed., *The Oxford Encyclopedia of Medieval Warfare and Military Technology*, vol. 2. Oxford: Oxford University Press, 2010, 306-307; Pál Engel, *The Realm of Saint Stephen: A History of Medieval Hungary, 895-1526*. London, I.B. Tauris, 2005, 309; Tamás Pálosfalvi, *From Nicopolis to Mohács: a history of Ottoman-Hungarian warfare, 1389-1526*. Leiden: Brill, 2018, 36-37.

6 Cristina Feneşan, *Constituirea principatului autonom al Transilvaniei*. Bucureşti: Editura Enciclopedică, 1997; Teréz Oborni, "From Province to Principality: Continuity and Change in Transylvania in the First Half of the Sixteenth Century." In István Zombori ed., *Fight against the Turk in Central-Europe in the First Half of the Sixteenth Century*. Budapest: Magyar Egyháztörténeti Enciklopédia Munkaközösség, 200, 165-179; Florin Nicolae Ardelean, "Political Boundaries and Territorial Identity in Early Modern Central Europe: The Western Frontier of Transylvania during the Sixteenth Century." *Territorial Identity and Development*, 6/1 (2021), 21-38.

while others competed for the Crown of Poland (Stephen Báthory was elected in 1576 while George Rákóczi II failed to gain the crown at the end of a disastrous military campaign in 1657). Some rulers like Sigismund Báthory, Michael the Brave or George Rákóczi I built strong systems of alliance which included the other Danubian vassals of the Ottomans, Wallachia and Moldavia, playing thus an important role in the political evolution of Central and South-East Europe[7].

Unlike the cavalry of the Polish-Lithuanian Commonwealth which had reached a high degree of standardization by the second half of the sixteenth century, Transylvanian mounted troops are much harder to distinguish on the basis of their weapons and equipment. Contemporary sources, both administrative and narrative documents, usually indicate the social background of a horseman (noble, Szekler *lófő*, conscripted retainer, *hajdú* etc.) or the branch of the army where he served (court cavalry, field army, county banner, Szekler banner etc.). The terms hussar and lancer (a name derived from the main offensive weapon the *kópja*) are sometimes used interchangeably. While some troops were distinguishable by the colour of their clothes (the Szeklers, for example favoured the colour red) the minimal requirements regarding weapons and equipment are rather similar across the whole principality.

Cavalry was a fundamental component in the armed forces of the Transylvanian Principality. The main purpose of this article is to identify and analyse the dominant features of mounted warfare in this region, from the middle of the sixteenth century to the end of the seventh century. Horse breeding and trade, the recruitment process and social background of mounted troops but also the performance of Transylvanian cavalry on the battlefield are the most important topics approached in the following pages.

Horse breeding and trading in Transylvania and neighbouring regions

In my attempt to offer an integrative view on cavalry warfare in early modern Transylvania, I've decided to approach the subject of horse breeding and trade. Although this is a vast topic, it has received very little attention so far. Transyl-

7 Both Romanian and Hungarian historiographies have provided the international reading public with general histories of the Principality of Transylvania, in English, as part of larger monographs dealing with the history of the region from the beginnings to recent times, see Ioan Aurel Pop, Thomas Nägler eds., *The History of Transylvania*, vol. 2. Cluj-Napoca and Bucharest, Romanian Academy, Centre for Transylvanian Studies; Romanian Cultural Institute, 2018; Béla Kópeczi ed., *History of Transylvania*, vol. 1-2. New York: Columbia University Press, 2001-2002.

vanian equine economy and culture retained an archaic character, especially when compared to the early modern developments which were taking place in the western parts of Europe.[8]

Historical sources, especially the descriptions of foreign travellers, often mention the large number of horses on the pastures of Transylvania, Wallachia and Moldavia[9]. Horse trade between the three principalities was also very intense. Transylvanian nobles and boyars from Wallachia and Moldavia often engaged directly in transactions regarding horses. This was such a common practice that it was sometimes used as a pretext for spying and gathering information. For example, in 1552, András Báthory of Somlyó received a commission for 100 cavalry form the Habsburgs who were governing Transylvania at the time. His first official mission was to travel to Wallachia and buy horses for his retinue but, in fact, his main objective was to gather news about the movement of Ottoman troops[10]. Diplomatic missions were also a good opportunity to engage in horse trading. In 1643, Prince George Rákóczy I gave detailed instructions to his envoy to the Moldavian court to buy two horses for his couriers and ten riding horses for the princely stable. The envoy was required to observe the health of each horse by checking the state of their teeth, mane and the size of their rump[11].

Documents are not always very specific about the various breeds of horses that were used in Transylvania. The most common distinction is made between riding horses, often referred to as saddle horses (*equi sellati*), and draught hors-

8 The development of coach and carrige transportation, equestrian academies and the so called "infantry supremacy" on the battlefields of western Europe are some of the most important changes in early modern equine economy and culture, see Peter Edwards, Elspeth Graham, "Introduction: The Horse as Cultural Icon: The Real and the Symbolic Horse in the Early Modern World." In Peter Edwards, Karl A.E. Enenkel and Elspeth Graham eds., *The Horse as Cultural Icon: The Real and the Symbolic Horse in the Early Modern World*. Leiden: Brill, 2012, 1-33; Tatsuya Mitsuda, *The Horse in European History 1550-1900*. Cambridge: PhD. Thesis, 2007, 14-62.

9 Maria Magdalena Székely, "Calul: de la mijloc de transport la simbol de putere." In Maria Magdalena Székely ed., *Lumea animalelor: Realități, reprezentări, simboluri*. Iași: Editura Universității „Alexandru Ioan Cuza", 2012, 89-90.

10 Florin Nicolae Ardelean, "On the Foreign Mercenaries and Early Modern Military Innovations in East Central Europe. The Army Castaldo in Transylvania and the Banat 1551-1553." In György Bujdosné Pap, Ingrid Fejér, Ágota H. Szilasi eds., *Mozgó Frontvonalak. Háború és diplomácia a várháborúk időszakában 1552-1568*, *Studia Agriensia, 35*. Eger: Dobó István Vármúzeum, 2017, 120.

11 Andrei Veress, *Documente privitoare la istoria Ardealului, Moldovei și Țării Românești, Acte și scrisori,* vol. X. București: Cartea Românească, 148; Szekely, "Calul," 92.

es (*equi curiferi* or *szekeres ló*)[12]. The most expensive were, of course, riding horses and among them Turkish horses were considered the most valuable. When describing the natural resources of Moldavia, Georg Reichstorfer mentions three breeds of horses that were most common there: Turkish, Wallachian and *asturcones*[13]. Dimitrie Cantemir mentions two kinds of Moldavian horses: a smaller breed encountered in the mountainous area, similar to Russian horses, and a larger and faster breed common in the lowlands. The larger Moldavian breed was very prized among Poles, Hungarians and even Ottomans[14].

In Transylvania, the Szeklers had a long tradition of horse breeding and horsemanship. Their name is considered to be derived from a Turkic term, meaning „horse with withe hoofs"[15]. They were settled in the south-eastern parts of Transylvania during the late phases of the Hungarian conquest of this province and were entrusted with the protection of the frontier in exchange for a privileged status. Throughout the Middle Ages, most of them served as light cavalry (horse archers) in the vanguard of the royal army[16]. In the second half of the sixteenth century, Giovanandrea Gromo, an Italian mercenary captain who served in the court guard of John Sigismund Szapolyai, was very impressed with the military potential of this community who, according to his estimates, could mobilize up to 50,000 cavalry. Although he clearly exaggerates the number of Szekler soldiers, Gromo offers some interesting observations regarding the local breed of horses which were of smaller stature but very resilient (*Questi cavalli sono di picola statura, ma fortissimi di natura*…)[17].

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12 Adrian Magina, "Multitudo Pecorum: Considerații asupra creșterii animalelor în Banatul medieval." In Doru Radosav, Radu Mârza ed., *Societat, Clutură, Biserică: Studii de Istorie Medievală și Modernă*. Cluj-Napoca: Argonaut, 2014, 258-260; se for example document 38, Adrian Magina ed., *Acta et documenta partes regni Hungariae inferiores concernatia 1500-1552*. Cluj-Napoca, Mega, 2020, 83.

13 Georg Reichstorfer, *Chorographia Transylvaniae, quae Dacia olim appellata, aliarumque provinciarum et regionum succinta descriptio et explication.* Vienna: Egidius Aquila, 1550, 28.

14 Dimitrie Cantemir, *Descrierea Moldovei*. Miron Nicolescu ed. București: Socec, 1909, 74-75.

15 Nathalie Kálnoky, *The Szekler Nation and Medieval Hungary: Politics, Law and Identity on the Frontier*. London: Bloomsbury Academic, 2020, 16.

16 Nathalie Kálnoky, "L'organization militaire de la nation sicule à la fin du Moyen Âge." In Hervé Coutau-Bégarie, Ferenc Tóth eds., *La pensée militaire hongroise à travers les siècles*. Paris: Economica, 2011, 29-40; Károly Vekov, *Structuri juridico-militare* și *sociale la secui* în *evul mediu*. Cluj-Napoca: Editura Studium, 2003, 40-50; Kálnoky, *The Szekler Nation*, 42.

17 Giovannandrea Gromo, *Compendio di tutto il regno posseduto dal re Giovanni Transilvano et di tutte le cose notabili d'esso regno (Sec. XVI)*, Aurel Decei ed. Alba Iulia: Tip. "Alba", 1945, 27.

Horses were regarded as a precious commodity in early modern Transylvania. Local transactions, but also documents referring to horses bought from Moldavia and Wallachia indicate very high prices especially for Turkish and Arabian stallions. In 1579, for example, a good Turkish horse from Wallachia was sold for 50 florins[18]. For the same price, a wealthy Transylvanian nobleman could have purchased 50 wolf pelts (1 florin each), 125 double dolmans (a close fitting jacket worn by Transylvanian nobles) or about 65 hussar shields for his mounted retinue[19]. Around the same period a riding horse equipped with all the necessary harnesses, probably a local breed, was estimated at a smaller price of 25 florins, while four draught horses were valued at 60 florins (15 florins each)[20].

At the end of the sixteenth century there was a considerable increase in the prices of commodities in the whole region. Horses were five or even six times more expensive compared to previous decades[21]. In 1595, Silvio Piccolomini, commander of the Tuscan mercenaries sent by the Grand Duke to help Prince Sigismund Báthory in the war against the Ottomans, mentions his difficulty in finding new horses for himself and his troops. The prices were very high because of the increased demand generated by the Long Turkish War (1591-1606)[22].

Sometimes, especially while the country was involved in military conflicts, Transylvanian rulers issued decrees which prohibited the sale of horses abroad, alongside other "strategic commodities"[23]. Such matters were usually debated during Diet sessions, and the articles issued on these occasions referred to horses in general or to certain categories. In March 1560 only the export of stallions (*equi masculi*) was prohibited together with leather[24]. One year later, in 1561, while Transylvania was still officially at war with the Habsburgs over borderland territories, export interdictions included any kind of weapons and horses younger

18 Ruxandra Cămărășescu, Coralia Fotino, "Din istoria prețurilor. Evoluția prețului cailor în Țara Românească (secolele XV-XVII)." *Studii și Materiale de Istorie Medie* VI (1973), 232.

19 Prices were estimated according to the limitations approved by the Transylvanian Diet in 1556; see Sándor Szilágyi ed., *Monumenta Comitialia Regni Transylvaniae*, vol. II. Budapest: Magyar Tudományos Akad. Könyvkiadó Hivatala, 1876, 65-71.

20 The horses were owned by a noble widow, Barbara Moise, see Livia Magina, "Un destin feminin în Banatul sfârșitului de secol XVI: Barbara Moise." *Analele Banatului, Serie Nouă* XIX (2011), 288.

21 Cămărășescu, Fotino, "Din istoria prețurilor," 230.

22 Holban ed. *Călători străini*, vol. III, 570.

23 Florin Ardelean, "Legislație militară și politică fiscală în timpul lui Ioan Sigismund Zápolya (1556-1570), "
Acta Musei Napocensis, 45-46/II (2008-2009), 51.

24 Szilágyi ed., *Monumenta Comitialia*, vol. II, 177.

than six years[25]. Another prohibition was issued in 1578, when horses were mentioned among other commodities that needed to be kept on the local markets[26].

Horses were an important symbol associated with princely authority in Transylvania. Beginning with Stephen Báthory in 1571, the rulers of Transylvania were elected by the representatives of the three estates (nobility, Szeklers and Saxons) and confirmed by the Ottoman sultan. During the ceremony of confirmation, the prince would receive certain gifts (insignia) from the Ottoman envoy marking thus a symbolic recognition of his election. A Turkish horse with richly decorated harnesses was one of the first gifts presented by the Ottoman envoy to the newly elected prince[27]. On 9 March 1600 such a ceremony took place on the outskirts of Brașov, when Michael the Brave was recognized as ruler of Transylvania. The new prince, accompanied by no less than 4,000 mounted soldiers, met with the Turkish delegation on the road, half a mile beyond the town's gate. The Ottomans brought the customary gifts, a richly decorated sabre, an oriental headdress adorned with heron and crane feathers, two red banners, two beautiful horses, five hawks and ten more horses. In return, Michael offered consistent money gifts to six of the leading members of the delegation while all the lesser attendants received kaftans[28].

The practical and symbolic aspects of horses were also underlined by their use as "diplomatic gifts". Transylvanian princes were delighted to receive horses from foreign envoys and, in turn, gifted horses from their own stables to consolidate good relations with their neighbours. This situation is best illustrated by an episode from 1595, when Prince Sigismund Báthory was visited by an ambassador of the Grand Duke of Mantua. The horses of the Gonzaga family had an excellent reputation throughout Europe[29] and the Transylvanian prince was very pleased to receive a beautiful steed with richly decorated harness, following the Ottoman style[30].

25 Szilágyi ed., *Monumenta Comitialia*, vol. II, 192, 198.

26 Szilágyi ed., *Monumenta Comitialia*, vol. III, p. 20.

27 János B. Szabó, Péter Erdősi, "Ceremonies Marking the Transfer of Power in the Principality of Transylvania in East European Context." In János Bak, Heinz Duckhhardt, Richard A. Jackson eds., *Majestas*. Berlin: Lit Verlag, 2013, 122-130; János B. Szabó, "The insignia of the princes of Transylvania." In Ibolya Gerelyes ed., *Turkish Flowers: Studies in Ottoman Art in Hungary*. Budapest: Hungarian National Museum, 2005, 131-142.

28 Holban ed. *Călători străini*, vol. IV, 142-144; Veress ed., *Documente*, vol. VI, 54-56.

29 Andrea Tonni, "The Renaissance Studs of the Gonzagas of Mantua." In Peter Edwards, Karl A.E. Enenkel and Elspeth Graham eds., *The Horse as Cultural Icon: The Real and the Symbolic Horse in the Early Modern World*. Leiden: Brill, 2012. 261-278.

30 Holban ed. *Călători străini*, vol.III, 553.

Local breeding and trade, especially with neighbouring Moldavia and Wallachia, secured a sufficient number of horses for the military needs of the Transylvanian Principality. Both local and foreign breeds (especially Turkish horses) were very well suited for the necessities of light cavalry. A steady supply of good quality horses enabled the rulers of the principality to keep a high number of mounted troops which were very useful, especially in the irregular warfare of the East-Central European borderlands.

From the court cavalry to the field army

Every ruler of Transylvania maintained a core of experienced soldiers at court. They were supposed to protect the prince and his family and they were mobilized when the army was on campaign. The court army (*exercitus aulae*) was divided in two branches, infantry and cavalry. Both locals and foreigners served in the court cavalry (*equitatus aulae*). In 1562, John Sigismund Szapolyai was accompanied by a mounted retinue of 1,000 courtiers[31]. Most of them were from noble or Szekler families, but Polish and Italian mercenaries are also mentioned by various sources. The presence of the two foreign groups was not a coincidence. John Sigismund's mother, Isabella Jagiello was daughter of the Polish king Sigismund I and Bona Sforza of Milan. The number of Polish and Italian courtiers at Alba Iulia grew especially after 1556. One of the most prominent figures among the Italians was captain Giovanandrea Gromo who commanded 300 mercenaries (100 cavalry and 200 infantry) recruited in the region of Venice[32]. When he reached the princely court in Alba Iulia, Gromo was impressed by the large number of Polish courtiers and soldiers, between 500 and 2,000 men, who all served as cavalry in the guard of the prince[33]. A few years after the death of John Sigismund, in 1574, French traveller Pierre Lescalopier observed that the court army of the Transylvanian prince (Stephen Báthory) had two companies of Polish lancers, four companies of local cavalry and 500 harquebus infantry[34].

31 Attila Sunkó, "Az erdélyi fejedelmek udvari hadai a 16. Században," *Levéltári Közlemények* 69/1–2 (1998), 106.

32 János B. Szabó, "The Army of the Szapolyai Family during the Reign of John Szapolyai and John Sigismund (Baronial, Voivodal and Royal Troops, 1510-1571)." In Pál Fodor, Szabolcs Varga eds., *A Forgotten Hungarian Royal Dynasty: The Szapolyais*, Budapest: Research Center for Humanities, 2020, 235-236.

33 Gromo, *Compendio*, 31; Holban ed. *Călători străini*, vol. II, 337.

34 Holban ed., *Călători străini*, vol. II, p. 443.

The size of the court cavalry increased in periods of war. Such a situation occurred after 1594 when Prince Sigismund Báthory joined the Habsburgs in the Long Turkish War (1591-1606). A record of the court cavalry issued on 19 November 1596 mentions a total of 2,067 nobles and their mounted retinues. In addition, 212 mounted members of the administrative staff (nobles and small retinues) are mentioned as receiving similar wages. Leading figures such as the chancellor István Jósika, Gáspár Kornis or Miklós Apafi had the largest retinues of 100 soldiers while lesser nobles commanded smaller groups of mounted servants. Most of these were part of the local nobility and bear Hungarian names. Some are descendants of South-Slavic (Croatians, Serbians etc.) families who had migrated to Transylvania in previous decades and had already integrated in the noble elite of the principality[35] like: Keglewith Péter, Perusith Máté, Deszpoth Márk, Iwankuith János, Ivankuith Lázar. A few others had Romanian names and were most likely boyars from Wallachia and Moldavia like Postelnyk Radul[36].

The regular wages of the court army were a heavy burden for the treasury. The Diet often complained about the high costs of maintaining soldiers at court and tried to limit their numbers to 500 infantry and 500 cavalry[37]. The estates were successful, at least in the first decades of the seventeenth century, and the size of the court cavalry was limited to 600-700 men even in the beginning of Gabriel Bethlen's reign (1613-1629)[38].

The Transylvanian prince and his court were often on the road, to attend the Diet or to visit his estates which were spread throughout the country. A significant number of soldiers accompanied him on such peregrinations, although there were some who usually resided on specific estates. In October 1638, for example, Prince George Rákóczi I travelled to the Saxon town of Bistrița. His

35 Regarding the South-Slavic nobility in Transylvania see, Neven Isailović, "Croatian Noble Refugees in Late 15th and 16th Century Banat and Transylvania–Preliminary Findings," *Revue des* études *sud-est européennes* 59 (2011), 125-155; Adrian Magina, "Nikola Crepović: a Serbian Nobleman and his Family in 16th Century Transylvania," *Historical Review*, *Belgrade* 72 (2023), 311-341; Florin Nicolae Ardelean, Neven Isailović, "From Croatia to Transylvania: War, Migration, and Adaptive Strategies in the Case of the Perušić Family (15th -17thCenturies)," *Povijesni prilozi* 60, (2021), 213-256.

36 Lajos Merényi, "Báthory Zsigmond Fejedelem Udvari Lovassága," *Hadtörténelmi Közlemények* (1894), 108-113.

37 Such a proposal was forwarded during a session of the Diet in 1608, see Szilágyi ed., *Monumenta Comitialia*, vol. VI, 94.

38 János B. Szabó, "Bethlen Gábor, az újjászervező. A kora újkori hadügyi fejlődés Kelet-Közép-Európában: az Erdélyi Fejedelemség példája a XVII. század első felében (1.rész)," *Hadtörténelmi Közlemények*, 126/4 (2013), 977.

retinue was so large that some of its members were lodged in the surrounding villages. Among them, 613 were infantry guards and 372 mounted guards[39]. Some years later, in 1649, the guard of the prince who performed another visit to Bistrița consisted of 400 infantry and 500 cavalry. Mounted troops were organized in banners on the base of their origin (Hungarians, Wallachians, and Moldavians) or their weapons (100 dragoons)[40].

An increasing number of sources mention the 'field army' (*mezei katonaság/ exercitus campestris*) as an important element of the Transylvanian military organization, beginning with the seventeenth century. Initially they were the so called 'free mercenaries' recruited for the duration of a single campaign. In time, some of them were settled on princely estates and became an extension of the court army. They were cavalry troops who had proven their worth especially during the campaigns of the Transylvanian princes against the Habsburgs in the Thirty Years' War. By the time of George Rákóczi I there were at least 2,000 mounted soldiers in the field army, but their ranks were considerably increased on the eve of a new campaign[41].

In the second half of the seventeenth century, during the reign of Prince Michael Apafi I (1661-1690), the size of the field army decreased as a consequence of important territorial loses. Nevertheless, cavalry maintained a dominant role among the court guard. In 1683, when Apafi was called to join the Ottomans under the walls of Vienna he relied on a mercenary guard of 1,170 soldiers, among whom 604 (51.62 %) were cavalry. Most of them were light lancers but muster registers also mention a banner of dragoons and a banner of carbine cavalry[42].

Nicholas Bethlen, a Transylvanian noble from the second half of the seventeenth century, mentions in his memoires that the cavalry of the field army was expected to perform the first assault and engage the enemy before all other troops[43]. The army of the court, which was later expanded through the field army, was undoubtedly the most important element in the military framework

39 András Péter Szabó, "A besztercei levéltár jegyzékei az erdélyi fejedelmi udvarról (1636–1659)," *Lymbus* (2016), 85-87.

40 Szabó, "A besztercei levéltár," 100.

41 János B. Szabó, "Gábor Bethlen's Armies in the Thirty Years War." In Gábor Kármán ed., *The Princes of Transylvania in the Thirty Years War*. Paderborn: Brill Schöningh, 2022, 50-51.

42 Florin Nicolae Ardelean, *Organizarea militară în principatul Transilvaniei (1541-1691): Comitate și domenii fiscale*. Cluj-Napoca: Academia Română. Centrul de Studii Transilvane, 2019, 201-212.

43 Nicolae Bethlen, *Descrierea vieții sale de către el însuși*. Cluj-Napoca: Casa Cărții de Știință, 2004, 171-172.

of the principality. Cavalry was always the most important branch within this core of professional soldiers. The size of the princely mounted retinue oscillated between 500 and several thousand men throughout the one and half century lifespan of the autonomous principality. Most of them were equipped as shook cavalry (hussars or lancers). Dragoons and carbine cavalry are attested especially in the second half of the seventeenth century.

The cavalry banners of the Transylvanian nobility

The obligation to join the general levy (*exercitus generalis*) was a fundamental feature of the nobility in the Kingdom of Hungary. Transylvanian nobles maintained this custom even after their region was separated from the rest of the Hungarian Kingdom and became an autonomous principality. All nobles were expected to join the banners of the counties were their main residence was located. Those who performed service at court were exempted form personally attending the levy but were required to send a mounted servant instead.

The mobilisation of the county banners was usually discussed during Diet sessions. Aspects such as provisioning, weapon standards and exemptions were established on such occasions. For example, in March 1542 the Diet gathered in the town of Turda decided that nobility should participate in military campaigns on horseback, but those who couldn't afford cavalry equipment were allowed to perform their duties as infantry, armed with gunpowder weapons. The minimal weapon requirements for mounted troops were: horse, lance, shield helmet and chainmail (or breastplate) (*habeat equum, arma, hastam, clypeum, galeam, et loricam*)[44].

Occasionally, the ruling prince and the Diet agreed upon a partial mobilisation of the levies provided by the Transylvanian estates. In such instances, the nobility was usually required to provide between 500 and 2,000 horsemen. The Szeklers had to mobilize the same number of mounted soldiers, while the Saxons provided a matching number of light infantry armed with harquebuses[45].

The Transylvanian nobility was rather numerous (about 5% of the total population) but very divers in terms of wealth and economic potential. While some of the most important office holders were able to muster large retinues of over 100 horsemen, many of their least wealthy peers couldn't afford a single war-

44 Szilágyi ed., *Monumenta Comitialia*,vol. I, 171.

45 Florin Nicolae Ardelean, *On the Borderlands of Great Empires: Transylvanian Armies (1541-1613)*. Warwick: Helion&Company, 2022, 32.

horse for themselves. Thus, it is no wonder that the attempts to standardize military equipment were faced with serious obstacles. Nevertheless, narrative sources tend to agree that the bulk of the noble cavalry was able to procure the basic equipment of hussars. Following his account about the transition from heavy to light cavalry, Antun Vrančić claims that Transylvanian nobles were equipped with a steel helmet, a chain mail (*lorica hamata*), a Turkish style sabre, a large shield on their left hand, an iron glove on their right hand and a lance[46]. Some decades later, Gromo describes them in a similar fashion with the important addition of gunpowder weapons. According to his narrative the nobles who served in the army of John Sigismund Szapolyai were equipped with: Turkish scimitars, shields, heavy long swords, small wheel lock harquebuses and chain mails[47].

Throughout the sixteenth century the equipment of the noble cavalry remained mostly unchanged. Filippo Pigafetta, who travelled to Transylvania in 1595 with a group of Tuscan mercenaries, noticed the specific war customs of this region. One of his first observations was that the local infantry used half pikes (*mezze piche*) and other short hafted polearms, while the local cavalry were mostly lancers and a small proportion of mounted harquebusiers. The nobility was organized in cavalry banners and each one carried significant quantities of food and fodder from their own estates when they were on campaign. The main weapon was a long lance, although some carried medium sized spears. Maces, sabers and a long sword attached to the saddle completed their offensive equipment. For defense they wore a chainmail, gloves and a Hungarian helmet (*celatine al Unghera*) which protects their neck and nose[48].

On campaigns, nobles were accompanied by retinues of armed servants, consisting of lesser nobles (*familiares*) or conscripted peasants, who went to war on foot or sometimes mounted[49]. The Prince and the Diet established the minimal size of these retinues based on the proprieties of each nobleman. In 1616, a few years after the election of Gabriel Bethlen, it was decided that a nobleman who had between 15 and 20 serfs on his lands had to mobilize two well-armed horse-

46 Wrancius, *De Rebus Gestis*, 149.

47 Veress ed., *Documente*, vol. I, 254; Holban ed., *Călători străini* vol. II, 321.

48 Holban ed., *Călători străini*, vol. III, 545-546, 548, 581-582; Eudoxiu de Hurmuzaki ed., *Documente privitoare la Istoria Românilor*, vol. XII. București: Academia Română și Ministerul Cultelor și Instrucțiunii Publice, 1903, 80.

49 *Coloni qui in expedicionem eligentur vt armati sint vel equites vel pedites fuerint, necesse est, qui si inermes reperiuntur condigna poena puniantur*, see Szilágyi ed., *Monumenta Comitialia*, vol. II, 87.

men; those with 32, 35 or 40 serfs should bring three horsemen; those with 50 or 60 serfs should bring five horsemen; those with 70, 75 or 80 serfs should bring seven horsemen and those with more than 100 serfs should bring at least eight horsemen. Poor nobles were expected to fight as light cavalry or, if they could not afford a horse, they should equip themselves as infantrymen, armed with a handgun, a sabre and at least 100 shoots[50].

In principle, the noble levy was mustered for defensive wars, inside the country. In practice, the county banners were sometimes partially mobilized for campaigns beyond the frontiers of the principality. In 1620, while Gabriel Bethlen led his army against the Habsburgs in Hungary, the Transylvanian counties provided 1,700 cavalry and 1,200 infantry[51].

Throughout the seventeenth century, the size and importance of the noble levy diminished. The nobles didn't give up on their warlike customs, but the territory of the principality was significantly diminished around the middle of the seventeenth century. At the same time, many members of the social elite chose to join the princely guard and the field army, or opted for service in the garrisons of border fortifications. Those who performed military service on horseback gave up on some of the defensive equipment and used more gunpowder weapons compared to the previous century. The warhorse with the long sword (*hegyestőr*) attached to the saddle remained the same. Sabres were attached to the waist and some had a sabretache (*szablyatarsoly*) hanging over. Across the chest they wore a bandolier with a small round container for gunpowder and a pouch full of shots. Carbines (*karabély*) were wide spread but flints were very rare in Transylvania[52].

Cavalry warfare was a fundamental feature of the noble ethos in the Principality of Transylvania. The horse continued to be regarded as a status symbol but also as a „practical tool" of war. Ottoman influences were indeed strong and are revealed by the preference for warm-blooded breeds (especially the prized Turkish horses) and by some pieces of equipment, like Oriental sabres and *sisak* (lobster-tail) helmets. The Transylvanian nobility provided a versatile type of light and semi-heavy cavalry, capable of performing shock tactics (frontal or flanking assaults) but also ranged combat using gunpowder weapons.

50 Áron Szilády, Sándor Szilágyi eds., Török-Magyarkori Állam-Okmánytár I. *Török-Magyarkori történelmi emlékek. Okmánytár*, vol. III. Pest: Eggenberger, 1868, 142-144.

51 Szilády, Szilágyi eds., Török-Magyarkori, vol. III, 218.

52 Péter Apor of Altorja, *Metamorphosis Transylvaniae* (translated by Bernard Adams). London and New York: Routledge, 2010, 49-50.

Szekler cavalry

The Szeklers had played the role of a „military auxiliary people" in the early phases of the Hungarian expansion in the Carpathian Basin. Settled on the south-eastern frontier of the kingdom, in Transylvania, they enjoyed a privileged status as a community in exchange for protecting the frontier[53]. A significant change in Szekler history occurred in 1562, when their privileges were suspended following a rebellion against John Sigismund Szapolyai. A part of their community maintained a semi-privileged status in exchange for military service. The elite of the Szekler society, nobles but also the more numerous strata of the so called *lófő* (roughly translated as horse leaders) joined the army of the principality as cavalry detachments. A regulation issued in 1566 required the Szekler horsemen to be equipped with a lance (*kopja*), breastplate, helmet and shield. Those who could not afford cavalry equipment were armed with portable fire weapons (*harquebus*), sabres and red clothes[54]. The conditions were very similar with those applied to the county nobility.

In 1614, Prince Gabriel Bethlen organized a conscription of the Szekler seats (administrative units) with the purpose of assessing their military potential. A total number of 12,412 heads of households were registered and divided in five categories: nobles, horse leaders (*primipili*/*lófők*), foot soldiers (*pedites pixidari*/*gyalogpuskás*), freemen (*libertini*) and serfs. The first four groups (5,945 men, representing 47, 9% of the population) had to perform military service, and among them the nobles and the horse leaders (2,399 men) formed cavalry detachments[55]. Although their recruitment potential was very high, the prince chose to mobilize smaller detachments of selected soldiers, ranging between 500 and 2,000 men.

In the following decades, in the context of the Transylvanian involvement in the Thirty Years War, the number of Szeklers with military obligations was significantly increased. According to a conscription drafted in 1635, Mureș Seat (Marosszék) alone mustered a total number of 3,916 soldiers (1,316 cavalry and 2,600 infantry)[56]. Compared to the 1,527 recorded in 1614, the military detach-

53 Kálnoky, *The Szekler Nation*, 19-20.

54 János B. Szabó, "A székelyek katonai szerpe Erdélyben a mohácsi csatától a Habsburg uralom megszilárdulásáig (1526-1709)." In József Nagy ed., *A Határvédelem* évszázadai *Székelyföldön: Csíkszék* és *a Gyimesek vidéke. Szerkesztette* és *a jegyzékeket* összeállította. Szépvíz, 2018, 145.

55 Lajos Demény ed., *Székely oklevéltár.* Új *sorozat 4. Székely népesség-összeírások*, *1575-1627*. Kolozsvár: Az Erdélyi Múzeum-Egyesület Kiadása, 1997, 197-562.

56 Demény ed., *Székely oklevéltár* 5, 480.

ment of this seat had increased by 156,46 % . Hoverer, the practice of a partial mobilization, especially for external campaigns, was maintained throughout the seventeenth century.

The weapons and equipment of a Szekler horseman was rather similar to that of a nobleman form the counties. Most of them were equipped as light cavalry with the lance as main offensive weapon. The use of gunpowder weapons became more and more common throughout the seventeenth century. An interesting development was the organization of the first native Transylvanian dragoons among the Szekler cavalry. Before the middle of the seventeenth century all dragoon detachments in the army of the principality were foreign mercenaries (mostly Germans). In 1656, Prince George Rákóczi II raised 88 Szeklers to the rank of dragoons (*equitum sclopetariorum*) for military merits during an expedition in Wallachia. They were expected to have good horses, sabres and long muskets. They had to fight on horseback but, if necessary, they should dismount and fight as foot soldiers. Form a social point of view they were assimilated to the horse leaders (*primipili*) group[57].

Mounted hajduks (hajdú)

Masters of irregular warfare, the hajduks proliferated in the borderlands of Royal Hungary and Transylvania. They represented the main fighting force during the anti-Habsburg uprising of Stephen Bocskai (1604-1606) and were thus rewarded with a privileged status as a community. In the sixteenth century they were organized mostly as infantry troops and on occasion as cavalry detachments [58]. In the seventeenth century most sources mention them as mounted soldiers. According to a regulation issued in 1620, a hajduk was expected to have: a good horse, helmet, breastplate, a hussar saddle and a long sword (*hegyestőr* or *pallos*)[59]. Both Gabriel Bethlen and George Rákóczi I relied on a large number of hajduk cavalry during their campaigns against the Habsburgs. In the winter of 1620-1621 more than 12,000 were billeted in western Hungary, ready to resume the expedition in spring[60]. One decade later, prince Rákóczi relied on almost 20,000 hajduks but he was never able or willing to fully mobilize them[61].

57 Szilágyi ed., *Monumenta Comitialia*, vol. XII, 345.

58 Ardelean, *On the Borderlands*, 44-45.

59 Szabó, "The Army of the Principality," 39.

60 István Seres, "Bethlen Gábor hadainak szállás- és hadrendje 1621-ből: Újabb források az erdélyi hadsereg történetéhez," *Hadtörténelmi Közlemények*, 126/4 (2013), 1050-1066.

61 István Czigány, "The 1644–1645 Campaign of György Rákóczi I." In Gábor Kármán ed., *The*

Transylvanian cavalry on the battlefield

In his *Compendio* written in 1567, Giovanandrea Gromo argued in favour of a general offensive against the Ottomans. He claimed that Transylvania, Wallachia and Moldavia could mobilize a combined force of 100,000 cavalry. Because these countries lack reliable infantry, an addition of 50,000 foot soldiers of foreign origins (Italians, Spaniards, Frenchmen, Swiss and Germans) and 6,000 heavy cavalry (*genti d'arme*) were deemed necessary to liberate all European territories from Ottoman rule[62]. Such „crusading projects" were quite common in the sixteenth century and their authors were usually very generous with the number of troops on paper, often ignoring the logistical issues of mobilizing such large masses. Nevertheless, Gromo, who had served as a mercenary captain in Transylvania, had reliable information on the military potential of the Danubian vassals of the sultan. Although his numbers are exaggerated, the Italian captain knew very well that Transylvania could mobilize a redoubtable cavalry force and that their native infantry was below the standards of Central and Western European states.

Cavalry was always the most important element in the armies of early modern Transylvania. In the decades following the fall of Buda (1541), the struggle to establish a territorial delimitation with Habsburg Hungary resulted in a protracted confrontation which was dominated by irregular warfare, typical for frontier areas. Small, mobile armies were fundamental for securing control over disputed territories although fortifications were beginning to play an increasingly important role[63]. Pitched battles were usually avoided, but when such confrontations did occur, the outcome was decided by cavalry charges. On 4 March 1562, a Transylvanian army of 8,000 – 10,000 men confronted a smaller force (4,000 men) from Upper Hungary in the vicinity of Hodod castle. According to Gromo, on this occasion, the Transylvanian army consisted of 8,000 cavalry and only 1,000 infantry[64]. Menyhért Balassa, the commander of the Hungarian troops loyal to the Habsburg King, was also relying mostly on mounted troops. The Transylvanians were besieging the castle when their enemies arrived, but they had enough time to reposition their troops on high ground and face the

Princes of Transylvania in the Thirty Years War. Paderborn: Brill Schöningh, 2022, 87.

62 Gromo, *Compendio*, 73.

63 Ardelean, "Political Boundaries," 21-38; Florin Nicolae Ardelean, "La frontiera de vest a Transilvaniei: Ferenc Némethi și evoluția conflictului Transilvano-Habsburgic între 1557-1565," *Crisia* LII/1 (2022), 177-183.

64 Gromo, *Compendio*, 62-63.

newly arrived force. The small infantry detachment was placed in the center while both flanks were secured by light and semi-heavy cavalry. Although they had numerical superiority, Transylvanian commanders decided to maintain their position. Balassa ordered a cavalry charge against one of the Transylvanian flanks, followed by a similar charge against the infantry. Both attacks were successful and the Transylvanians were driven form the battlefield after a failed counterattack[65]. This battle proved that speed and initiative were fundamental in achieving success with an army dominated by cavalry. At the same time, the Transylvanians had learned that mounted troops (especially their lightly armed riders) were not best suited to maintain a defensive position.

Transylvanian cavalry was able to demonstrate its value but also its shortcomings during the Long Turkish War (1591/1593-1606). A few years after the conflict began, Prince Sigismund Báthory, together with his close allies from Moldavia and Wallachia, decided to rebel against the Ottomans and join the Habsburgs. After almost a year of skirmishes in the borderlands, Báthory was faced with the prospect of losing his Wallachian ally when Grand Vizier Sinan Pasha crossed the Danube with a large force in 1595. Determined to face this threat, the Transylvanian prince gathered a large army on the southern border of his country, close to the mountain passes leading into Wallachia. This was an unprecedented concentration of military forces, where the regular troops of the Transylvanian prince were joined by allied troops from Moldavia and Wallachia, 1,500 German heavy cavalry (*reiters*) sent by Emperor Rudolph II, a company of soldiers from Tuscany and other groups of adventurers and foreign mercenaries attracted by the prospect of the anti-Ottoman war. The total size of the cavalry was 20,000 soldiers, among whom at least 7,000 were Transylvanians. Data regarding the infantry is even more imprecise but, on this particular occasion, the number of foot soldiers exceeds the cavalry, reaching up to 32,000 men. Sinan Pasha refused to confront this large coalition army and retreated south of the Danube. Sigismund Báthory advanced without facing major opposition. The only significant military operations were two sieges (Târgoviște and Giurgiu) and the redoubtable cavalry force couldn't be used to its full potential[66].

65 Endre Veress, *A történetíró Báthory István király*. Cluj-Kolozsvár: Minerva, 1933, 32-33; Ödön Hegyi, "Székely Antal tudósítása a Hadadi csatáról," *Történelmi Tár* (1990), 142-144; Ardelean, *On the Borderlands*, 74.

66 Ioachim Crăciun, "Scrisoarea lui Petru Pellérdi privitoare la ajutorul dat de Sigismund Báthory lui Mihaiu Viteazul în campania din 1595," *Anuarul Institutului de Istorie Națională* VI (1931-1935), 494- 502; Andrei Veress, "Campania creștinilor în contra lui Sinan Pașa din 1595," *Academia Română. Memoriile secțiunii istorice*, IV/3 (1925), 103-104; Radu R.

Cavalry had an important role to play in siege warfare, especially in confrontations with the Ottomans. When dealing with smaller fortifications, the attackers would attempt a surprise attack (sometimes during the night) or they would simply intimidate the garrison and obtain a peaceful surrender. In the case of well supplied fortified towns, an efficient blockade was considered the first necessary step and light cavalry played an essential role in performing this operation. In 1596, when the Transylvanian army besieged Timișoara, they were constantly threatened by a very mobile force of Turks and Tatars which were hidden in the nearby woods. Prince Sigismund led a successful cavalry charge against them, but in doing so he delayed a general assault on the fortress. After 14 days of siege he was forced to retreat because a larger Ottoman army was coming to aid the besieged town[67].

In pitched battles, cavalry charges were regarded as the most efficient way of securing victory. Infantry and filed artillery had an auxiliary role and were usually positioned on the flanks of the army. In the battle of Șelimbăr (28 October 1599) Michale the Brave of Wallachia confronted Cardinal Andrew Báthory, who had been recently elected prince of Transylvania and intended to make peace with the Ottomans. Báthory organized his troops in three battle lines, with large cavalry detachments at their centre. The vanguard, consisting of 1,000 Szekler horsemen, charged at the centre of the first enemy battle line and routed the light infantry detachment which had been positioned there. This attack had a strong impact on the morale of the Wallachian army. However, the tide of battle was turned by a flanking manoeuvre performed by the mounted Polish and Cossack mercenaries of Michael the Brave. In the next phase of the battle, Prince Michael took the initiative and directed his cavalry against the second line of the Transylvanian army. Overwhelmed, the cardinal's troops took flight and the ruler of Wallachia won the battle which secured him the Transylvanian throne[68]. Less than a year later, he lost the throne in another pitched battle at Mirăslău

Rosetti, *Istoria artei militare a românilor până la mijlocul veacului al XVII-lea*. Bucureşti: Corint, 2003, 403-408; Ardelean, *On the Borderlands*, 80-83.

67 Florin Nicolae Ardelean, The Siege of Timișoara in the works of Bernardino Beccari da Sacile. In Zsuzsanna Kopeczny ed., *Politics and society in Central and South-East Europe: life under the shadow of the Ottoman Empire's expansion (15th-16th centuries)*. Cluj-Napoca, Mega, 2021, 117-123.

68 Ioachim Crăciun ed., *Cronicarul Szamosközy* şi însemnările *lui privitoare la români 1566-1608*. Cluj: Institutul de Arte Grafice Ardealul, 1928, 123-126; Wolffgangi de Bethlen, *Historia de rebus Transsylvanicis*, vol. IV. Cibinii: Typis et sumptibus Martinii Hochmeister, 1785, 400-406; Ardelean, *On the Borderlands*, 86-89.

(18-19 September 1600). His tactical approach was similar, relying on swift cavalry charges, but this time he faced a different kind of enemy. The Habsburg commander, Giorgio Basta, simulated a retreat with the aim of luring Prince Michael away from his high-ground position. Michael saw this as an excellent opportunity to strike with his light cavalry and followed the enemy. Basta ordered a counter attack carried out by a sizeable detachment of Silesian heavy cavalry (1,500 men), armed with pistols and heavy swords. When they were within 50 paces from the enemy, the *reiters* shoot their pistols and then charged with the swords. The lightly armoured cavalry of Michael the Brave was scattered and the prince himself barely escaped the battlefield alive[69].

The high proportion of cavalry in the Transylvanian army offered tactical advantages over armies dominated by infantry and encumbered by artillery. However, in a pitched battle they would stand little chance against an enemy with superior firepower. When Prince Gabriel Bethlen joined the Protestant faction in the Thirty Years War he was well aware of this situation and tried to use it to his advantage. During the first expedition, initiated in September 1619, his troops moved swiftly across Habsburg Hungary and on 14 October he was already in Bratislava[70]. Although he signed an armistice with the Habsburgs, who recognized him as ruler of Hungary, Bethlen kept a significant force of 8,000 cavalry (mostly lancers) and 6,000 infantry in western Hungary. In January 1620 he sent a detailed report to the Ottoman sultan, claiming that during the next year he will be able to muster 41,000 soldiers from Hungary and Transylvania, among which 57,6 % were cavalry and 42,4 % were infantry[71]. In reality, the actual size of his army was significantly smaller (about 11,000 men) but the number of mounted troops always exceeded the number of foot soldiers.

In the battle of White Mountain (8 November 1620) Bethlen was represented by a small detachment of light cavalry (1,500-2,000 men) and 3,000 more horsemen were on the way but didn't manage to reach the battlefield in time. During the night before the battle, the Transylvanian camp was attacked and suffered a significant number of casualties. Next day, when it became obvious that the Habsburgs were going to win the battle, Bethlen's light riders were able to escape without suffering any more loses[72]. The defeat of the Bohemian rebels had

69 Petre P. Panaitescu, *Mihai Viteazul*. București: Fundația Regele Carol I, 1936, 225; Veress ed., *Documente*, vol. VI, 205-213; Ardelean, *On the Borderlands*, 89-93.

70 Szabó, "Gábor Bethlen's Armies," 59-61.

71 Szilády, Szilágyi eds., Török-Magyarkori, vol. III, 218.

72 Lajos Kropf, "Bethlen Gábor lovassága a fehérhegyi csatában,1620," *Hadtörténelmi Kö-*

very little impact on Bethlen's position in Hungary. He maintained his control over the country and billeted a significant force in the borderlands which consisted of: 10,210 cavalry, 1,700 infantry, and 700 soldiers from the court guard[73].

When the Habsburgs initiated major offensives in Hungary, Bethlen would reinforce the garrisons of major fortifications and retreat his main army eastwards. In 1621, when General Bucquoy besieged the fortified town of Nové Zámky after a successful expedition in western Hungary, the army of the Transylvanian prince was able to return in time and defeated the besiegers. They travelled swiftly and took the Habsburg troops by surprise with a cavalry charge just before dawn. In the following days they constantly harassed their camp with small detachments of cavalry and on 10 July Bucquoy was killed during a skirmish with Bethlen's cavalry[74]. Throughout the rest of the war, Transylvanian commanders did their best to avoid pitched battles. Their cavalry was best suited for skirmishes, ambushes and raids on the supply lines of the Habsburgs. This approach proved to be successful and at the end of each campaign the prince would keep most of his troops and pressured the enemy into agreeing a favourable peace agreement.

The high proportion of cavalry troops was maintained throughout the seventeenth century although there were some changes in terms of tactics and equipment. An increasing number of mounted soldiers were now armed with gunpowder weapons and specialized units such as dragoons and „carbine cavalry" began to appear. The skill of the Transylvanian cavalry was once again put to test during the campaign of George Rákóczi II for the Polish Crown in 1657. Although the army didn't suffer major defeats and was able to achieve most of its objectives, the expedition was a failure because of strategic and political reasons. According to a report drafted by the Swedish commander Heinrich Coelestin von Sternbach, in February 1657, the Transylvanian prince had crossed the border into the Polish-Lithuanian Commonwealth with an army of 18,000 cavalry and 5,000 infantry[75]. The initial number might have been even greater because Moldavians, Wallachains and Cossack allies also marched with the Transylvanian prince. Rákóczi and his troops covered about 1,800 km in seven

zlemények XI (1910), 460-461; Szabó, "Gábor Bethlen's Armies," 65-68.

73 Seres, "Bethlen Gábor hadainak,"1050-1066.

74 Georg Kraus, *Cronica Transilvaniei 1608-1665*. Bucureşti: Editura Academiei Republicii Populare Române, 1965, 51-52; Szabó, "Bethlen Gábor (2)," 60-61.

75 Alexander Szilágyi ed., *Transsylvania et Bellum Boreo-Orientale: Acta et Documenta*, vol. II. Budapest: Magyar Tudományos Akadémia, 1891, 273.

months, occupying the most important towns on their way (Cracow, Warsaw, Brest etc.) but this was not enough to win the Polish Crown. There were no major clashes with the enemy during this campaign, except the last stand against the Tatars at Trembowla (Terebovila in Ukraine), at the end of July. Exhausted by long marches, constant skirmishes and lack of supplies the Transylvanian army was defeated and the survivors were taken into captivity[76].

Conclusions

Transylvania, like many other East-Central European regions, was a place where cavalry never lost its "supremacy" during the early modern period. The prince of Transylvania was able to muster a large cavalry force given the modest size of his state. This was possible because there was a vast supply of horses available in the principality and in neighboring regions. Smaller but faster and resilient breeds, such as Turkish horses, were favored by the lightly armed Transylvanian riders. Most of the cavalry was provided by local levies (nobility, Szeklers and Hajduks) but foreign mercenaries, Poles, Italians and Germans (especially dragoons) were also employed in the army of the principality. There were, of course, significant changes in the development of mounted combat, determined by the wide spread of firearms, especially in the seventeenth century. Instead of relinquishing his position to infantry the horseman adopted new weapons, gave up on some of his defensive equipment and adapted to new tactics on the battlefield. The cavalry of the Transylvanian principality was a very mobile and versatile force skilled in both shock tactics and ranged combat. They excelled in the various forms of irregular warfare but they became vulnerable in pitched battles, especially when faced with an enemy with superior fire power or with heavy cavalry.

76 János B. Szabó, "„Sors bona nihil aliud" Az 1657. évi erdélyi 'Blitzkrieg' kudarca Lengyelországban," Ildikó Horn et al eds., *Művészet* és *mesterség: tisztelgő kötet R. Várkonyi Ágnes emlékére*. Budapest: L'Harmattan, 2016, 231-250; Sándor Gebei, "II. Rákóczi György lengyelországi hadjárata, 1657," *Hadtörténelmi Közlemények* 105/2 (1992), 30-62.

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QVE LA FORME ANCIENne de renger la Cauallerie en haye, ou en file, eſt maintenant peu vtile, & qu'il eſt neceſſaire qu'elle prenne l'vſage des eſquadrons.

QVINZIEME DISCOVRS.

LEs François, qui ſont fort prõpts à embraſſer les choſes nouuelles, & à quitter les vieilles, n'ont pas touſiours tellement obſerué ceſte regle, qu'ils ne ſoyent demourez fermes en aucunes façõs anciennes, qu'ils ont eſtimé deuoir eſtre cõtinuees. Mais quand on eſt venu à les bien examiner, on a conu que comme en quelques vnes ils ont monſtré auoir laiſſé le pire, pour prendre le meilleur: auſſi en d'autres ils ont fait paroiſtre auoir meſpriſé ce qui eſtoit plus receuable, que ce à quoy ils demouroyent attachez. Il eſt auſſi quelque fois aduenu qu'en vne meſme choſe leur bon & mauuais jugement s'eſt deſcouuert. Car la pouuant rendre vtile, belle, & facile tout enſemble, ils ſe ſont contentez de la premiere qualité: & au lieu des deux autres, il y ont adiouſté la laideur & la difficulté. L'exemple que i'en allegueray, ſera de la maniere de s'armer de maintenant. Or comme ils ont eu bonne raiſon (à cauſe de la violence des harquebuſes & pi-

Inconſtance du François.

Exemple en armes.

Nn iij

Discours politiques et militaires du seigneur de La Nouë. Nouvellement recueillis et mis en lumiere. [Genève] « Bâle », 1587, p. 285: «Quinzième Discours: Que la forme ancienne de renger la Cauallerie en haye, ou en file, est maintenant peu vtile, & qu'il est necessaire qu'elle prenne l'vsage des esquadrons». (Swiss Electronic Library, e-rara.ch).

The Italian contribution to the Transformations of Cavalry, XVI-XVII centuries

Luca Domizio (University of Genoa)

One of the main themes of the military history of the early modern age is the problem of continuity and discontinuity in the practice of war[1]. However, the debates about the military function of cavalry have been more neglected, generally titling paragraphs «The Dusk of Cavalry» or similar concepts. New recent studies, particularly those highlighting global or *long durée* perspectives, have furnished more interesting and comprehensive visions[2]. I share some of the main points, considering it important to focus on changes and continuity in the practice and theory of warfare, while also trying to avoid teleological and simplistic approaches that do not consider the variety of historical contexts. In this chapter, I therefore want to widen the debate by analyzing the Italian contribution to the transformations of cavalry throughout the XVI and XVII centuries. I will recur in particular to the military treatises of the time, but also to some concrete cases of events to show how the actual practice of warfare reflected (and influenced back) the theory. To do so, I'll adopt a type of reasoning task-based, which is very useful for thoroughly understanding the variety of functions cavalry, and horses more generally, had to perform in early modern armies. Focusing on the military side of the horse, however, the whole knowledge developed on horse's medicine, *dressage*, or chivalric codes won't be addressed here. This is an interesting and rich field of texts that would take us far from our specific topic.

1 This book series has already touched upon the subject with a very fundamental contribution: Jeremy Black (Ed.), *Global Military Transformations: Change and Continuity, 1450-1800*, Roma, Nadir Media, 2023.

2 Frédéric Chauviré, *Histoire de la cavalerie*, Paris, Perrin, 2013. For a thorough understanding of the European context, readers may also refer to his chapter in the present book. For a global perspective: Jeremy Black, *Cavalry: A global history*, Barnsley, Pen and Sword Military, 2023.

It has been written that between the XVI and XVII centuries, the cavalry weapon lost its centrality: surely the symbolic one (with a scission between chivalry and cavalry), the practical might be argued if really present also in the previous centuries. This doesn't mean that cavalry disappeared from the battlefields, as it often remained the unit capable of inflicting resolution to battle and encounters. However, this perspective is not sufficient to understand the role of cavalry. Indeed, we should start by understanding the relations within the army between cavalry and the other components, then trying to understand how these changed over time. If we focus on these, we can see that in the second half of the XVI century, cavalry was required to specialize into new kinds of units, adopting a wider range of functions. This transformation surely had technological reasons (the wheel-lock pistol foremost) and sociological ones. If the chivalry model was becoming less relevant and unsustainable (as correctly pointed out), we should not confuse this change with a general dusk of cavalry. Therefore, the point should be to understand how the interactions within the army changed and how they worked, as well as what kinds of roles and tasks cavalry assumed. Military treatises, especially those written by professional soldiers of the time (avoiding, in this case, the exclusively theoretical, which can be studied for other reasons), can help us give a description of a precise moment with indications of how warfare was changing. Furthermore, other types of sources such as memorials or accounts, often handwritten and unpublished, can be helpful in this type of research.

As it may be obvious, by 'Italian' we don't mean the modern notion of it, but the one already used in the timespan considered, referring to the people generally living in the ancient Italian States and speaking the Italian language. Rather than simply thinking this contribution as one coming from a territorial state, I find it interesting to reconsider the thesis advanced by David Parrott. He argued that the military treatises of the so-called 'reformed Dutch system', and those produced on the same system by French authors, should be read as part of a political and propaganda program rather than real military visions of their practice of war[3]. I do not share complete skepticism about the contents of the treatises,

3 «In the case of the Dutch Republic, military reform had a specific aim: the repackaging of the Dutch army after decades in which it had been outclassed by the Spanish army of Flanders. The rhetoric surrounding the presentation of this 'new model army›, stressing the Roman origins of its new drill and tactics, should be contrasted with the reality of a force overwhelmingly composed of foreign mercenary troops serving under contract». David Parrott, *Richelieu's Army: War, Government, and Society in France, 1624-1642*, Cambridge, Cambridge University Press, 2001, p. 26. See also Giovanni Cerino Badone, «La cultura del-

but I agree that we should view them in light of the political environment of the authors who produced them[4]. As Italians served as professional soldiers all over Europe and abroad, we must take into consideration their allegiances when they produced a text[5]. The majority of the writers served as Habsburg military men; therefore, as suggested by Marco Mostarda, we can consider them agents of the Empire[6]. This perspective is useful for understanding the military treatises as part of the Catholic and imperial effort to maintain the hegemonic status of the time. In this sense, we can also interpret the internal links of the texts, in addition to the explicit initial affirmations of loyalty, and the re-editions and translations as part of a polarized network. From this point of view, the interesting studies of Piero del Negro about language as a vehicle and spy of innovation[7] can be reconsidered not only from a national perspective (e.g., the innovation of Italian, French, Spanish, or other cultures in a period) but also as a symptom of innovation within the shared culture of a system of alliances that went beyond territorial borders and included religions and cultures. Therefore, we should not just talk about Italian knowledge but rather Catholic and Habsburg imperial knowledge.

1. The Main Debate: Lance *versus* Corazze

The most discussed question in sixteenth-seventeenth century treatises on cavalry concerns the two types of armoured cavalry, the *Lance* (*Lances*) and the *Corazze* (*Cuirasses*, Cuirassiers). While the latter represented a response to the declining tactical effectiveness of the lances caused by the improvements and

la guerra. Sapere teorico e sapere empirico nel mondo militare del XVII secolo», *Società e Storia*, n. 136 (2012), pp. 261-282.

4 Due to spatial constraints, we will not delve into the biographies of the authors, reeditions, and translations of the texts. For more information and references on these topics, I refer readers to my previous article: Luca Domizio, «Dall'armata a cavallo all'arma di cavalleria. Trasformazione militare e mutamento sociale», *Nuova Antologia Militare* (NAM), Fascicolo N. 15, Anno IV (giugno 2023), pp. 83-142.

5 For a comprehensive understanding of the field, see Virgilio Ilari, *Scrittori militari italiani dell'Età Moderna: Dizionario bio-bibliografico 1410-1799*, Roma, Nadir Media, 2021 (1a ed. 2011).

6 Based on insights from Gregory Hanlon in his text on the Italian military tradition, Marco Mostarda, Virgilio Ilari, «Exploring the Italian Military Paradox, 1450-1792» in Jeremy Black (Ed.), *Global Military Transformations*…, p. 227.

7 Piero del Negro wrote various contributions on this subject, the most recent being Piero Del Negro, «Le lingue del "militare"», in Id, Paola Bianchi (cur.), *Guerre ed eserciti nell'età moderna*, Bologna, Il Mulino, 2018, pp. 51-70.

widespread of firearms, the lances were long maintained because they were the heirs of the ancient feudal hosts and ensured Knighthood a more comfortable and privileged military service. The lances were steeped in a long-standing tradition and embodied a formal ethos that had been codified since the XIII century[8]. They were the successors of the medieval *gendarmerie*, which had undergone adaptation over time (for instance, the term *Lancia* transitioned from referring to a unit of 3-5 different combatants to denoting a single knight). This was the reason for their preservation on the battlefield, their continuity in the use of the lance and the complete armor (while the full suits of armour still formally existed, their complete utilization was decreasing, prompting some commentators to refer to lancers as light cavalry), complemented by their tactical efficiency in the charge *en haie* (linear and small formation). The cuirassiers, on the other hand, emerged after firearms were introduced and adopted by cavalry, enabling firing while in motion. The German Reiters, professional soldiers who achieved some successes during the French Wars of Religion, were among the first to use this technique. Their presence stimulated the adoption of different solutions by the French cavalry. Through a process of trial and error during the XVI century, the cuirassiers emerged as a response shaped on the field[9]. This specialization, adopted also for its affordability (due to less armor for both the cavalryman and the horse), was characterized by deep and thick formations. Initially consisting of 15 ranks in the XVI century, these formations were later reduced to 6 or fewer in the following century. These large squadrons moved slower and did not require elevated equestrian skills or high-quality horses, making them easier to replace. Therefore, gallop was avoided and substituted by trot, while charges were conducted differently or replaced by indirect maneuvers.

Alessandro Massari Malatesta was the first Italian military author to approach the subject[10], signaling no differences in armor but just in the offensive weapon (lance or pistol), the real distinction was that the cuirassier was superior because his firearm allowed him to shoot from a standing position and in usually unconventional places for cavalry[11]. The author also adopted a distinction based

8 Philippe Contamine, *War in the Middle Ages*, Malden, Mass. Blackwell, 1999, pp. 126-132.

9 To see their effect and the complex dynamics of transformation within this war see Treva J. Tucker, «Eminence over Efficacy: Social Status and Cavalry Service in Sixteenth-Century», The Sixteenth Century Journal, Vol. 32, No. 4 (Winter, 2001), p. 1057-1095.

10 In France, the discussion emerged during the Wars of Religion. For example, François de La Noue in his *Discours politiques et militaires* (1587) already made direct comparisons between the two specializations, but also Jean de Saulx, vicomte de Tavannes in his *Mémoires*.

11 «[…] poiche con l'istessa pistola si puote in necessità riparare, schiffare, e spezzare l'incontro

Fig. 1 Frontispieces, with portraits of the authors, by Giorgio Basta, *The government of the light cavalry* (1616) and Bartolomeo Pellicciari, *The universal instruction for the service of the cavalry in all occasions of war* (1617)

on where the cavalry came from, signaling that the French were famous for their *furor*, and the Germans for *obbedienza*. This was a reference to the traditions of each country, signaling the important tradition of the French cavalry to charge *en haie*, while the Germans were known as *Reiters* (riders).

The first modern treatise of military cavalry, however, is the one (published posthumously) of Giorgio Basta, the first to rationalize the equestrian military component. His experiences in Piedmont, Flanders, Hungary, and Transylvania influenced the author, allowing a broad conception of cavalry not limited to a particular context. Regarding *Lance* and *Corazze*, the author perfectly identified the problem regarding the economic and social unsustainability of the former specialization, arguing that the rise in costs and the expense of horses and armor reduced the general operability of men-at-arms. Therefore, lancers adapted to survive, starting to use less heavy and complete (therefore less expensive) armor, in a manner that led Basta to categorize the Lance as a unit of light cavalry. This didn't bring about a change in function, which was always to «break and divide a formation, searching for rapidness.»[12] The *Corazze*, on the other hand, were characterized by their solidity, not just individually but as a formation, the squadron, moving at a slower pace. In this case, pistols were instructed to be used also for offensive purposes, but only at close range. The main point, however, was that it was far easier to recruit and instruct them[13].

In the last chapter of his tract (*Comparison between Corazze and Lancie*), Basta underlined that men-at-arms were almost dismissed everywhere in his days, not because of their ineffectiveness on the battlefield (although deploy conditions weren't always attainable) but because of the difficulty in recruiting enough for the wars of the period. Surely, the cuirassiers could operate in different environments and, as they didn't need to charge at a gallop, could also use

della lancia, oltre che la pistola è arma più curta, più offensiva, e più sicura, meglio accomodata alla mano, e fa buonissimo effetto nel combattere in troppa: dove che le lancie s'impediscono, e non si ponno adoperare se non in spatio lungo non potendo fare incontro, se non nel corso e nell'impeto, il che non interviene con la pistola, perché nella stretta e nel star fermo si può adoperare». Alessandro Massari Malatesta, *Compendio dell'eroica arte di cavalleria del Sig. Alessandro Massari Tiburtino. Precetti Qvattro*. In Venetia, 1599, pp. 12-13.

12 «forar e dividere uno squadrone, ricerca velocità». Giorgio Basta, *Il governo della Cavalleria leggiera*. Trattato originale del conte Giorgio Basta, utile a soldati, giovevole a guerrieri, et fruttuoso a capitani, et curioso a tutti. In Venetia, appresso Bernardo Giunti, Gio. Battista Ciotti et Compagni, 1612, p. 306.

13 « […] sempre sarà più facile l'assoldar grosso numero di Corazze, che di Lancie per l'esquisitezza che queste ricercano maggiore de cavalli, e di prezzo, che non ricercano le Corazze, alle quali bastano cavalli mediocri, che in ogni paese facilmente si trovano». *Ivi*, p. 102.

horses of lower quality, being able to replace the animal if necessary. The central point for Basta, as underlined by Frédéric Chauviré, was the cost-effectiveness reasoning. Basta was therefore considering replacing the quality loss with quantity. The very end of the treatise, however, is problematic (probably also due to the posthumous of the text), because the last sentence explicitly affirms that the men-in-arms in the past were the superior cavalry because the cuirassiers weren't yet there, therefore they were fighting just among each other, while in his present times Lance wouldn't stand against the more numerous and solid squadrons of cuirassiers. The prediction was correct (although these would also face a transformative process in the following years), but it was partly in contrast with what was previously written. Nevertheless, the sentence was utilized as the main polemical point by the main adversary of Basta, Johann Jacob von Wallhausen, the official theorizer of the so-called «Dutch military reforms».

Always from the military and political environment of the Habsburgs, another author is Lodovico Melzi (or Melzo, as appears on the title page of his treatises and in some documents)[14]. Like Basta, the author wrote to compensate for the absence of instructions dedicated to military cavalry, which differed from infantry due to its more dynamic role, often necessitated by unexpected dangers and the possibility of fortuitous encounters. Initially, Melzi was very critical of lancers, arguing that light cavalry was more useful. However, later, he affirmed that every specialty of cavalry had its strengths and weaknesses. Operational conditions for lancers were not always ideal, and they couldn't effectively fight on every terrain. On the other hand, Melzi strongly emphasized the ease of recruiting and training cuirassiers, always noting that they would excel as supports for lancers during a charge, tasked with deepening and widening the break made by the others. Therefore, his position was to combine the two equestrian specialties to achieve the best effect from them.

An important contribution to the debate is that of Bartolomeo Pellicciari, who fought under the command of Giorgio Basta in Flanders and authored two significant treatises for the use of cavalry: the first on the organization of war (1606) and the second specifically dedicated to equestrian weapon (1617). In the latter, Pellicciari is the first author to focus mainly on cuirassiers, beginning the chapter with their history and why they were introduced. According to the author, their origin was a Habsburg response to counter the efficiency of the French Cavalry, making them superior to lancers, with some exceptions when

14 Lodovico Melzo, *Regole Militari sopra il Governo e Servitio particolare della Cavalleria* […]. Anversa, Appresso Gioacchino Trognasio, 1611.

lancers were deployed in more favorable environments or led by more capable commanders.[15] Finally, the cuirassiers were, in any case, able to replace the old role of lancers.

Flaminio della Croce published his text in 1625, a more extensive treatise with some unique features. First, the author inserted a specific chapter dedicated to the debate between *Lance* and *Corazze*, in which he explained how the latter type of cavalry was introduced to remedy the growing problems of the former. However, in a first moment, he sustained that lancers could still be useful, but in following chapters and after introducing a new specialty of cavalry, he would assert that removing them was easier and more economical. The author is also the only one reporting the point of view of the cavalrymen, quoting their preference for other weapons[16]. In a direct fight, he sustained the absolute superiority of cuirassiers because once the energy of the main charge of lancers was broken, they would have been completely lost in close combat. Besides the charge, after all, lancers weren't suboptimal for other tasks, such as ambushes. This didn't mean that della Croce couldn't see the problems of cuirassiers, particularly the speed of degradation of their armor. Furthermore, the author saw obsolescence in the cuirassiers and their caracole, not foreseeing a solution in the adoption of a more direct fighting approach. The author resolved this debate by proposing a new specialty of cavalry, a unit which he called the *Franchi Moschettieri*, mounted musketeers who were intended to be more adaptable than lancers, lighter than cuirassiers, and at the same time heavier than harquebusiers. In essence, an armored unit centered on firepower, capable and adaptable to various situations and terrains. However, this proposal, even if logically acceptable, remained theoretical, as the main transformations of cavalry were moving towards close combat rather than fire skirmishes.

The last author considered here is Raimondo Montecuccoli, not for a dedicated text to cavalry, but for his contributions to the utilization of the cavalry in war. His considerations are the result of a variety of experiences, from European encounters in different theaters to wars with the Ottoman Empire. His

15 Bartolomeo Pellicciari, *Avvertimenti in Fattioni di Guerra*, Ristampati in Modena per Gio. Maria Verdi, 1606; Id, *Universale instruttione per servitio della cavalleria in tutte l'occorrenze di guerra*, in Venetia, Appresso Antonio Pinelli, 1617.

16 «Gli soldati generalmente aborriscono la lancia, chiamandola la Croce de cavalli leggieri, essendo veramente un continuo disturbo il portarla attaccata alla resta, ò in coscia per longo tempo, come alle volte occorre». Flaminio Della Croce, *L'essercitio della cavalleria et d'altre materie del capitano Flaminio della Croce, gentilhuomo Milanese diviso in cinque libri*, […]. In Anversa, appresso Henrico Aertsio, 1625, p. 120.

tracts, written at different times, were not published during his life but were brought to light in the following century and only recently in complete editions. The starting point is *Delle Battaglie*, in which Montecuccoli defined the main difference between the two, with the lancer as an offensive unit and the cuirassier as a defensive one. Like everyone else, he emphasized the greater solidity of a deep squadron of cuirassiers compared to a thin company of lancers. During his synthesis of the evolution of cavalry (starting from the Roman Empire), he observed how, after the introduction of cuirassiers, they adopted squadrons of 7 and 8 rows, which were later reduced by the imperials to a depth of 4 or 5 rows and noting how the Swedes only used 3.
Montecuccoli emphasized that the main objective of cavalry was always to break the enemy unit, regardless of the method used. When it came to choosing who was superior, in his first text, Montecuccoli would have opted for cuirassiers. In a later text, however, *Della guerra col Turco in Ungheria* (also known as *Aforismi*), the author sustained a different position, choosing the lancer as the best cavalry specialization when in the proper conditions[17], such as the Polish hussars (whose use and development process had, however, a different history)[18]. After half a century, Montecuccoli would still explicitly consider himself in the tradition of Basta and Melzi, recognizing, however, that lancers weren't a viable option anymore due to their cost. The solution, therefore, was the use of *Mezze Corazze* (half cuirassiers), a result of practical use of cavalry on the battlefield. This kind of unit was to be equipped with lighter armor (both in terms of quality and quantity). The system of weapons was the same as that of the cuirassiers, but their use favored closer combat with swords, even though initially he emphasized the use of firearms. The preparation of the shock with the enemy unit was to be left to the *maniche* (*mangas*) of musketeers, who with agility must have followed the cavalry.

As often, practice anticipates theory regarding war, as the men-at-arms equipped as lancers, debated in the treatises, completely disappeared in the first

17 «È la lancia regina dell'arme a cavallo: ma ella dev'essere armata ed instrutta come il Basta ed il Melzi la ricchieggono, cioè abbiano ottimi cavalli e terreno piano, sodo, non impedito». To quote Montecuccoli's texts we refer to the most recent and filologically accurate version of the manuscrips: Raimondo Montecuccoli, «Della Guerra col Turco in Ungheria», in Raimondo Luraghi (acd), *Le opere*, vol. I-II, Roma, Ufficio Storico Stato Maggiore dell'Esercito, 1988, p. 478.

18 On this specific kind of lancers, their history and development as an early modern adaptation, rather than a medieval tradition, see: Robert I Frost, *The Northern Wars: War, state and society in Northeastern Europe, 1558-1721*, Harlow-New York, Pearson Education, 2000, pp. 192-216.

decades of the XVII century, when they were not already dismissed at the beginning[19]. However, this debate helps us to understand how the practice of warfare changed, highlighting some of the elements that transformed in the meanwhile. The richness and impact of these texts in Europe at the time is understandable, considering the numerous translations and reeditions during the century, as well as the continuous references to them.

Furthermore, treatises weren't the only texts in which we can observe these reflections. Other important documents are memorials and reports made for governments and commanders, which weren't supposed to circulate because they were considered sensitive information and remained manuscripts (many still probably wait to be found). This is the case with some of the texts of Montecuccoli, published only partially in the XVIII century. Another example is the handwritten report of Francesco Martinengo in 1598, in which he gave his opinion on how the Republic of Venice should have equipped and deployed cavalry, advocating for abandoning lancers (something the Republic did only some years after the war of Gradisca)[20]. In this report, Martinengo (who previously served at length in the Savoyard army, collecting various experiences) wrote considerations touching on some points in ways similar to the ones discussed in the cavalry tracts[21]. This also confirms that this subject, as treated in the published texts, was at the center of real attention and interest. As the main scope of the report was practical, Martinengo inserted important considerations regarding pragmatic themes. For example, discussing the geographical conditions necessary for lancers (a flat and wide terrain, a point well stressed by every author), he underlined how Northern Italy, and Venice in particular, didn't have the nec-

19 In some cases, they survived, mostly with honorific duties, but their service in campaigns didn't extend beyond the second decade of the century.

20 I thank Paolo de Montis for bringing this document to my attention, which is preserved at the Archivio di Stato di Brescia (ASBs). I'd like to emphasize the importance of having networks of researchers who actively engage in debate and share information, as facilitated by the SISM. For further insights into the nature of this document and the topic of cavalry between the XVI and XVII centuries in Venice, see Michael Mallett, John R. Hale, *The Military Organisation of a Renaissance State, Venice c.1400 to 1617*, Cambridge, Cambridge University Press, 1984, pp. 369-371.

21 He also shared some of the points of La Noue, talking about lancers he affirmed: «[…] quando si và ad incontrare squadrone di Cavalleria con altro squadrone simile voglio presuporre et accordare, che la lancia faccia il suo effetto, non incontraranno però che la prima et al più la seconda fila, il resto poi non può fare niente di buono». ASBs, Archivio Martinengo, b. 143 (Colleoni), *Parere circa la rifforma delle Lancie*, 21 Gennaro 1598.

Fig. 2 Frontispieces of the treatises of Lodovico Melzo (in the Spanish translation *Reglas militaris sobre el gobierno y servicio particular de la cavalleria*) and Flaminio Della Croce, *L'essercitio della cavalleria*).

essary characteristics (unlike France, for example)[22]. This document, therefore, is important because it illustrates the centrality of the main debates within courts and governments of the time, showing that they weren't just theoretical exercises for scholars.

2. New specializations: mounted harquebusiers and dragons

Besides this important debate, Italian military treatises highlight other significant aspects of cavalry. Indeed, these texts reflected on the new specializations of cavalry that emerged in the XVI century, such as mounted harquebusiers and dragoons (with a distinction not always clear). These types of units were what would later be defined as light cavalry in the second part of the XVII century, performing the majority of the tasks assigned to cavalry during a campaign.

Basta was the first to recognize that the wide range of activities of cavalry necessitated different equipment and techniques that wouldn't have been possible for just one universal type of cavalry. The origins of mounted harquebusiers to him were to be found in the last phase of the Italian Wars, in which they were used to operate ambushes, skirmishes, and raids in villages or advanced posts. He didn't distinguish them from dragons, therefore implying they had the same function. The main features of this kind of cavalry were to quickly react and take advantage of opportunities, in addition to their ability to also operate on foot on the ground. They had a function also on the battlefield (mainly as a support of heavy cavalry), but their usefulness was expressed at its best outside of it.

Melzi, like Basta, described the introduction of mounted harquebusiers in the last phase of the Italian Wars in Piedmont, used by the French with the name of Dragons. The first Spanish commander to adopt them was the Duke of Alba in Flanders. Melzi is very clear in the tasks of this unit, specifying all the different actions they could perform, summarizing what was known as partisan warfare[23]. He also worries about explaining how mounted harquebusiers could have operated under the rain without losing effectiveness. On the other hand, Melzi was

22 «Dentro il suo felicissimo Stato ogn'uno sa che non vi sono campagne, come la lancia hà bisogno, ma solo fossi con acque, boschi, vigne et simili, che è il vero contrario alle lancie. Se fuori vedemo li nostri vicini, che sono l'istesso, vedasi il Stato di Milano, il Mantovano il Parmegiano, Ferraresi et Romagna, et in fine tutta l'Italia è in questa maniera dove la Cavalleria non può combattere se non sopra le strade […]». *Ibidem*.

23 Not referring to the politicization of individuals as irregular fighters, but rather a type of warfare conducted by *partitanti*, which signifies groups of regular soldiers moving in parties for detached tasks. See George Satterfield, «The Fate of Petite Guerre in Early Modern Europe», *Revue Historique des Armées* (SHD), 2017/1 (n° 286), pp 48-59.

aware that the main weakness of this unit was its lightness and its impossibility to sustain a fight for a long time or against heavier units; therefore, they should always have strived to avoid it.

Pellicciari follows the same opinions, focusing on the light armor and on the actions of assistance (which weren't secondary, but an intrinsic part of the main effort combined with other units) that mounted harquebusiers had to perform. Therefore, if lancers and cuirassiers had to be organized in large and solid units, harquebusiers had to be divided into small companies, multiplying also the commanders and their initiatives[24]. The main feature should have been the «prestezza», the ability to always be ready for every occasion or danger. In the event of battles, he suggested equipping with heavier armor, but he remembered that the main tactic should have always been one of small attacks from different directions, never the pursuit of a frontal charge.

Della Croce, in his text, started from a different position, arguing that the mounted harquebusiers were the unit least paid and how unjust it was, because they were the ones taking part in every kind of action and always the first to move «quando ben sovente li altri riposano, li Archibugieri à cavallo travagliano»[25]. Beside the amount of different works, however, the author sustained that the majority of soldiers wanted to serve there because of the greater freedom of action and the preferences available. Above these lines are also the considerations regarding the equipment, less expensive in comparison to lancers and cuirassiers, also easy to replace. Della Croce was also harshly against a detail of the organization proposed by Melzi, particularly about the equipment of the captain of the company that he considered to be equipped with heavy armor, while Della Croce suggested a light armor for the whole company, in order to act homogeneously. This might seem like a detail, but in reality, it is indicative of the attention with which these military authors read each other, paying attention to every aspect considered.

Montecuccoli also distinguished mounted harquebusiers and dragons: the first characterized by the application of the caracol, the latter more apt to dismount for combat action (recalling their infantry origin and adopting all exposures of the terrain). He focused particularly on the role of dragons during marches and movements, anticipating even the vanguard, occupying specific problematic positions, and preventing eventual ambushes in chokepoints. Fur-

24 He emphasized the role of non-commissioned officers such as caporals, also suggesting, for example, the implementation of prizes for the quickest in recharging or the fastest rider.

25 Della Croce, L'essercitio della cavalleria…, p. 184.

thermore, Montecuccoli in *Delle Battaglie* is the first to organically include light cavalry units such as Hungarians, Croats, and Poles, a variety he encountered and came to know during his service in the Imperial army. To him, light cavalry was defined by being: « […] soldati a cavallo che non hanno arma alcuna di difesa, ma solo per offesa hanno due pistole e la spada, più atti a seguitar l'inimico quando è rotto, che a romperlo, et abili ad altri servizi nell'esercitio in cui si richiede prestezza e velocità»[26].

Another point discussed by every author, but that we don't have the space here to dwell on, is the explanation of all the possible formations adopted by the cavalry units, both the real ones used and the abstract ones with no concrete application. Furthermore, there are also discussions about how to employ the tactic of the caracole to its best advantage. However, it is more interesting, in my opinion, to consider now all the other points that go beyond the conventional elements and add important information to our understanding of cavalry warfare of this period.

3. Cavalry practices in everyday warfare

Most of the treatises analyzed are not only about combat but also encompass every other aspect of military life revolving around the *fait d'arme*: the organization of quarters, posts, and ambushes, but also how to utilize spies and local guides, how to cover your tracks while marching, etc. When considered together, these tasks would be termed *Petite Guerre* one century later. Even though the word didn't exist yet with that organic meaning, this is one of the cases in which careful anachronism can be helpful, particularly in providing insight that all the distinct actions should be considered together to understand the everyday practice of war. In this sense, this isn't a quest for a precedent, but an effort to regroup all the elements that constituted this quotidian experience[27]. Indeed, a real linear and clear distinction between major and *petite guerre* never existed, as they were (and are) consubstantial and it's better to think it as a spectrum.

26 Montecuccoli, Delle Battaglie…, p. 37.

27 As brilliantly defined by Lund in his book, this also involves investigating the existence and use of certain skills, thereby adopting a perspective of labor history within the military profession: «[…] clearly musketry, fencing, and the ability to conduct battalion and brigade drills were vital talents on the battlefield, but their study does not take us far from that field. Armies also have to move, eat, and build or attack fortifications. These tasks necessarily drew on the whole gamut of human skills and technology». Erik Lund, *War for the Every Day. Generals, Knowledge, and Warfare in Early Modern Europe, 1680-1740*, Greenwood, Westport (Con.), 1999, p. 9.

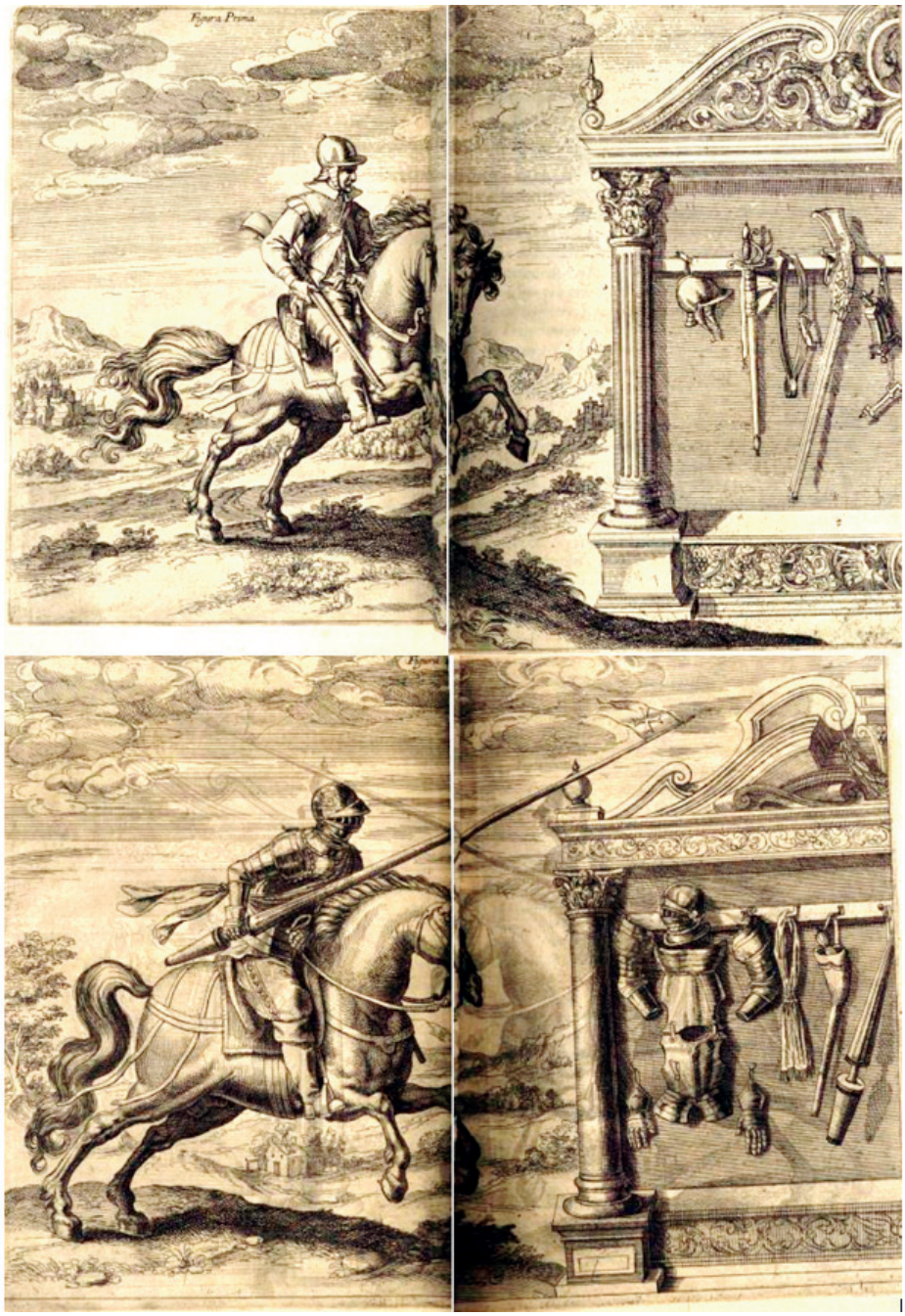

Fig. 3 illustrations from the treatise by Lodovico Melzo

Besides, the units implied in these tasks weren't only (even though, obviously, the majority) the light ones, but also what could be considered the heavy and linear ones[28]. As recently highlighted in an important article, exploring how *petite guerre* (or small wars) functioned in practice can uncover new avenues for research[29]. Therefore, this chapter doesn't aim to assert that there existed an antecedent to the theoretical XVIII-century conception of *petite guerre*. Instead, it suggests that military writers of the late XVI and early XVII centuries, after extensive experience in warfare, emphasized (particularly in cavalry treatises) the importance of all these actions that constituted their everyday life on campaign, even though they didn't formulate a doctrine out of it[30].

The Italian treatises considered here were involved in this context. For instance, one of these actions was making contact (*pigliar lingua, prendre langue, tomar lengua*), which wasn't merely the act of gathering information about the enemy, but (although each author adds some nuances) the act of capturing an

28 The authors often referred to the use of men-at-arms, namely lancers, drawing on the earlier medieval tradition of cavalry raids and skirmishes. To explore this tradition further, see, for example: Aldo A. Settia, *Rapine, assedi, battaglie. La guerra nel Medioevo*, Roma, Laterza, 2002; Yuval N. Harari, *Special Operations in the Age of Chivalry, 1100-1550*, Suffolk, Boydell et Brewer, 2007.

29 In this seminal article, the authors demonstrate new approaches to studying the Thirty Years' War and campaign operations, analyzing and organizing data in innovative ways. As they assert: «Westphalia's example shows that the belligerents in the Thirty Years War employed their own form of small war which drew directly on practices already common in late sixteenth-century conflicts, rather than from learned treatises. Small war was integral to how hostilities were conducted, rather than specifically selected as some Fabian strategy of attrition. It was crucial to how the war was sustained and objectives pursued.» Peter H. Wilson, Katerina Tkacova, Thomas Pert, «Mapping premodern small war: The case of the Thirty Years War (1618-48)», *Small Wars & Insurgencies*, 34:6 (Jun 2023), p. 22. While I concur with this viewpoint, I would contend that many of the treatises from the period under consideration were not 'learned' or artificial. Rather, they were authored by seasoned military professionals drawing directly from their practical experiences in warfare. The abundance of examples found in these texts attests to their practical grounding. Therefore, these military writers did not explicitly perceive these tasks as components of a major strategy, but rather as necessary and inherent actions in the conduct of warfare. Recognizing this perspective can aid in understanding the practice of small war, shedding light on elements that may not be readily apparent from actions alone, because considered obvious in other types of available sources. I hope to explore this further in future contributions.

30 I believe this point is also emphasized by Sandrine Picaud-Monnerat. While her significant study explores linguistic antecedents, she also dedicates considerable attention to the practical aspects beyond terminology. In doing so, she makes a valuable effort to examine the implications of this type of warfare in the XVII century. Sandrine Picaud-Monnerat, *La petite guerre au XVIIIe siècle*, Paris, Economica, 2010, pp. 115-152.

enemy soldier and interrogating him to obtain details about their army (which necessitated having more than one). To execute this task, it was necessary to dispatch a small detachment of cavalry (preferably mounted harquebusiers, as suggested by Basta[31]) near the enemy camp for at least a day, granting them full autonomy in their initiative to achieve the desired outcome. Basta also provided instructions regarding the use of *corritori*, raiders who even preceded the vanguard to observe the movements of the enemy without being detected. For instance, they were required to exercise extreme caution to prevent ambushes in chokepoints and difficult passages. These *partis* (Basta prescribed a veteran with approximately ten raiders to constitute them) operated in all directions, not just the one chosen for the march. The author emphasized here that the chosen troops were to be trustworthy and autonomous in their movements (if necessary, they should have been able to seize the initiative for an attack). They should have been capable of discerning false information, even unintentionally caused by simulated enemy attacks, a danger that could result in confusion and disaster for the army. Another significant aspect of this type of warfare was the nighttime period, with the primary challenge being marching and potentially fighting in darkness.

Lastly, there were the tasks of minor officers assigned to special detachments. The *trombetta*, for example, had an official role in sounding orders, but also an informal one of spying during missions. The *bargello* (captain of the campaign) had the primary function of administering justice but also had to secure trustworthy guides and sufficient food supplies from the region. The *Forieri Maggiori* had to select the best location for the nightly camp, thus anticipating the dynamics of potential surprises and raids[32]. Furthermore, as Basta explained in his general treatise on conducting a campaign, cavalry had a role also in sieges, patrolling the trenches around the cities from internal and external threats, especially at night[33]. It's interesting to note how, for example, in the first war of Monferrato, a neglected conflict which hadn't major battles[34], but was character-

31 Giorgio Basta, *Il governo…*, p. 77-79.

32 *Ivi*, p. 48.

33 Basta believed that sieges were not won by frontal charges, but by the slow advances of sappers. However, they were exposed to rapid attacks from the enemy, both from inside and outside the siege. Therefore, cavalry played a fundamental role in rapidly reacting and protecting them. Giorgio Basta, *Il maestro di campo Generale*, curato da Ciro Spontone. In Venetia, appresso Gio. Battista Ciotti sanese, 1606, p. 116.

34 To understand the significance of the conflict, and even to reflect on its historiographic shadows, see Bernardo J. García García, Davide Maffi (coord.), *El Piamonte en guerra (1613-*

ized by sieges and trench warfare, cavalry still occupied an important role. For example, in June 1617, Charles Emanuele tried to resupply Vercelli, besieged by the Spanish army, by sending approximately 500 cavalrymen equipped with sacks of black powder during the night. This rapid rescue force, crucial for the already exhausted garrison of the city, was discovered and blocked by the Spanish cavalry and garrisons, largely due to the adverse weather conditions that slowed the Savoyard troops[35].

Melzi also showed great interest in these topics, explicitly affirming that the primary function outside the battlefield was to always keep the enemy on alert[36]. About the *corridori*, for example, the author shared the same instructions as Basta, showing how service in the same army shaped their mentality on practices. Remarkably, Melzi also underlined how the major danger was the spread of false alarms due to a wrong understanding of the situation by the raiders. However, unlike Basta, he dedicated more attention to night marches, instructing to adopt parties preceding the vanguard, even of 60 mounted harquebusiers. Other instructions focused on how to perform a retreat effectively and deceive the enemy by utilizing multiple paths and *ruses* to disorient him. These and other elements were expedients to utilize cavalry to gain time, the essential element. More original are the considerations regarding foraging operations, a fundamental and recurrent action (at least twice a week) to sustain the entire army. Here, cavalry (harquebusiers and cuirassiers) had to be employed in combination with infantry to ensure protection of men and the forage convoys[37].

1659): La frontera olvidada, Madrid, Fundación Carlos de Amberes, 2020.

35 About this and many other events of this war, we're precisely informed by a highly documented agent of the Republic of Genoa, who collected intelligence for the government. This episode is interesting because it reveals how and to what extent cavalry could be deployed in sieges: «Si è inteso che havendo il Duca di Savoia fatto scielta di 400 in 500 de suoi cavalli con un sacheto di polvere in groppa li mandò giobi notte per soccorrere di essa polvera Vercelli. In rettardati nel viaggio per l'acqua e per il fango piu del'hora prevista furono scoperti et combatuti con morte numerosa d'essa gente». Archivio di Stato di Genova (ASGe), Archivio Segreto (AS), f. 1981, Vincenzo Poggi letter of 11 June 1617.

36 «E la Cavalleria principalmente suol'esser'impiegata in più modi per travagliar', e tener'inquietato il nimico, hora con impedirgli i viveri, e con danneggiarli i foraggieri, e hora co'l mandar Troppe di cavalli à correre, fin sotto il suo Campo, ad effetto di far qualche bottino, per tirar fuori in questo modo i nimici, e fargli cader'in Imboscata, disposta prima in luogo opportuno». Lodovico Melzo, *Regole Militari* …, p. 181.

37 «[…] se tal'hora avviene, che sia rotto uno di questi Convoi, con tutta la Cavalleria, che vi si truova, ch'alle volte è di grosso nervo di cavalli, si può temer, che da un tal cattivo incontro segua la rovina d'un Essercito, poiche oltre alla perdita sodetta, e de gli altri cavalli di servitio, sopra i quali sogliono i soldati andar' à disdosso in quelle occasioni, per mancamento di

Fig. 4 illustrations from the treatise by Flaminio Della Croce

Finally, this operation should have been conducted within a wider operational consideration, planning whenever possible to forage in enemy areas in order to deduct important resources from the enemy. In addition to this, the author provided more detailed instructions on how to optimize the guarding of places, patrolling, inspecting roads (*battere la strada*), etc… Another chapter is dedicated to the organization of cavalry ambushes and the different kinds (starting from the quantity of soldiers utilized, from 50 to over 4000 cavalrymen), showing the richness of details and tactical considerations necessary[38]. During the first Monferrato war, Melzi was given the charge of *maestre de campo* (even if strongly against the political decisions of the Marquis de la Hinojosa), so he organized and conducted operations. It's interesting to note, therefore, how he managed to organize cavalry and infantry troops to operate in practice, especially in cases of emergency, reacting with immediate solutions to the enemy threats[39].

Also Pellicciari shared some important considerations about the essential role of cavalry in sieges, highlighting how crucial it was to prevent enemy incursions and surprises in order to proceed with the systematic and slow exploitation of a fortress[40]. On points like the role of spies, guides, and campaign commissioners, the author shared the same considerations as Basta. This is because he followed the same precepts and practices of war in Flanders, illustrating how firsthand experience influenced military theory.

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ronzini, possono anche perdersi molti carri della monitione di guerra, e de' viveri, e molti de gli Offitiali del Campo, e d'altre persone particolari. Onde per assicurarsi, non conviene andar'à foraggio senza buon nervo di fanti, e di cavalli». *Ivi*, pp. 86-87.

38 These kinds of instructions and details can be traced, albeit not in a direct and linear link, to those present in the treatises on *petite guerre* from the XVIII century.

39 For example, during a winter raid by the Savoyan Prince, Melzi reacted with his garrison force by pursuing the enemy during the night and through difficult weather conditions: «Entrò in questo Stato il Principe Thomaso di Savoia, con 400 cavalli et 3000 fanti, per trascorrere, all'oppositione del quale fu subito spedito 600 cavalli et 4000 fanti de quelli che sono remasti sotto la cura del Cavagliere Melzi [… The prince Tommaso retired himself at the sight of the Spanish contingent, utilizing the cover of the spreading fog] et il cavag. Melzo poco doppo la mezza notte havendo inteso la poca distanza fra l'uno e l'altro se ne andò a quella volta per assaltar il Principe, ma ritornò che poco prima se n'era partito e ritirato a Vercelli». ASGe, AS, f. 1981, Vincenzo Poggi letter of 6 december 1614.

40 «Mentre la fanteria travaglia nell'espugnatione di qualche terra, tocca alla cavalleria per ordinario di battere li camini, per li quali il nemico possa venir, e di procurare per tutti li modi d'havere certezza de i suoi pensieri, e mosse; e per haverla andrà a far'imboscate sotto le sue terre, e cercherà di fare prigioni, e spetialmente nel giorno che si dovranno dare gli assalti, tutta starà in arme, e userà le sudette diligenze; e è obligata d'assicurare sempre le spalle alla fanteria in tutte l'espugnationi, e prese di piazze». Bartolomeo Pellicciari, *Avvertimenti…*, p. 221.

Flaminio della Croce also added some points on this subject, notably affirming that this way of fighting had advantages over open battles, where chance could be both favorable and dangerous)[41]. The author noted how wars of his time were prolonging more and more in duration, thus necessitating the adoption of operational measures to preserve the army from significant losses. While he didn't introduce new elements in the description of patrolling, collecting information about the enemy, and other tasks, della Croce showed a wider range of factors to consider when planning an attack on enemy quarters, ranging from the troops available to the customs of drinking among the enemy troops in the camp. Additionally, the details in the organization of the attack exhibited some originality, although they may have been too precise to be applied in different contexts.

Finally, Montecuccoli highlighted the continued importance of these kinds of operations. He made the similitude of the marching army to a body, with the squadrons of light cavalry representing the imagination of a man, necessary to foresee obstacles. The raiders sent before the vanguard were likened to the eyes, aiding in guiding the rest of the army[42]. Montecuccoli focused extensively on elaborating combined arms ambushes, envisioning operations of varying sizes where cavalry played a decisive role. The Imperial general also reflected deeply on how to sustain an army logistically during a campaign, considering it the most critical factor to address. To resolve this issue, Montecuccoli advocated for a system of warehouses and convoys that required protection and guarding by swiftly reacting cavalry forces.

41 «[…] deve giuntamente ogni capo haver consideratione di superare il suo nimico se possibil sia con qualche avantaggio, o d'ordinanza, o di sito, o vero con stratagema, la qual viene più stimata in fatti di guerra che l'istessa risolutione, e valore, atteso che con quella si suepra le forze, la risolutione, e valore del nimico, e insieme si conservano intatte le sue, senza esporle all'arbitrio della fortuna. Et che più? Colui che per via di strattagema resta del suo adversario vittorioso; fa due singulari effetti: con l'uno s'acquista per se stesso maggior gloria, che con il molto sparger del sangue: con l'altro atterisce il nimico con tal atto, che lò rende (oltra la perdita) confuso; attonito, svergognato, ignorante apresso il volgo, e finalmente timido, non sapendo per l'avenire come governarsi, dubitando sempre di esser trappollato, e colto con inganni all'improviso». Flaminio della Croce, *L'essercitio*..., p. 370.

42 «Li squadroni dei cavalli leggeri che vanno innanzi ai guastatori si assomigliano all'immaginazione dell'uomo, perché preveggono gli incommodi a venire essendo sempre pronti a diffendere la fronte dell'essercito e le squadre dei guastatori et a rispingere le ingiurie dei nemici; i corriodiri, che sono cavalli leggeri et osservano, spiano gli andamenti del nemico, si paragonano agli occhi il cui uffizio è governare bene e regere la mole di tutto il corpo». Raimondo Montecuccoli, *Trattato della guerra*…, p. 317.

Even though these examples provide a glimpse into the subjects and excerpts found in the texts, they underscore the wealth of information available for analysis. The Italian contribution to the transformations of cavalry wasn't a uniform or systematic endeavor; rather, it represented the collective efforts of various military figures grappling with the rapidly changing battlefield of cavalry warfare. Studying these texts enables us to grasp how military commanders interpreted these transformations, prompting them to reassess their methods of organization and engagement. Ultimately, this internal military dialogue and knowledge production contributed to the development of a new type of military knowledge that was part of a broader cultural movement[43].

43 With the advent of printing, a revolution occurred, giving rise to new kinds of cultures and creating a new world of knowledge transmission: Elizabeth L. Eisenstein, *The Printing Revolution in Early Modern Europe*, Cambridge, Cambridge University Press, 2012 (1st ed. 1983).

Fig. 5 and 6. Pieter Snayers (1592-1666/7), View of the battle identified with that of Fleurus (1622), won by the Spanish army of Gonzalo Fernández de Córdoba, even if the Protestant army forced the Catholics to abandon the siege of Berg-op-Zoom. Rijksmuseum, SK-A-1555. CC0 1.0 Universal Public Domain Dedication. Details https://upload.wikimedia.org/wikipedia/commons/2/21/Een_veldslag_Rijksmuseum_SK-A-1555.jpeg

The Dynamics of Cavalry Evolution in the Battlefield: The Charge of Heavy Cavalry in the Modern Era

Frédéric Chauviré

Introduction

The heavy cavalry of the modern era is often perceived as an archaic arm, a repository of the practices and values of nobility and chivalry, unable to integrate the rapid transformations of the art of war. Machiavelli, from the beginning of the sixteenth century, unequivocally condemned heavy cavalry, which he considered obsolete and useless in pitched battles[1]. The historiography of recent decades often echoes it. A reactionary group animated by "an inflexible spirit of caste" according to Mr. Van Creveld[2], the men-at-arms of the late fifteenth and early sixteenth centuries were for Robert O'Connell the human equivalent of certain super-specialized reptiles incapable of adapting to changes in their environment[3]. However, M. Dugué Mac Carthy reminds us that at the end of the modern period, it was still to his cavalry that Frederick II of Prussia owed most of his victories.[4] Louis A. Di Marco also considers "objectively false" the idea that the period 1500-1800 would see cavalry fade in the face of the growing power of infantry and artillery.[5] Measuring the ability of heavy cavalry to evolve and adapt in order to continue to play a role on the battlefield is therefore essential to understanding the history of the equestrian weapon.

This is not an easy analysis, but we can rely on a line of study rich in perspec-

1 Machiavelli*, L'Art de la guerre*, in *Œuvres complètes* (Paris, Gallimard, La Pléiade, 1954), p. 762-763.

2 Martin Van Creveld, *Technology and War* (London, 1991), p.95.

3 Robert O'Connell, *Of arms and men*, (Oxford, 1989), p.104.

4 Marcel Dugué Mac Carthy, *La cavalerie au temps des chevals* (Paris : EPA éditions, 1989), p.116.

5 Louis A. Di Marco*, War Horse, A History of the Military Horse and Rider* (Yardley, Pa :Westholme Publishing), 2008, p.191.

tives. Dedicated to frontal combat, the heavy cavalry favoured a very characteristic mode of action: the charge. The charge, Guibert reminds us, is "the combat action of the cavalry, and consequently its important and decisive movement[6]." It was, as confirmed in a memorandum of 1769, the principal object of the battle cavalry, "all the other objects to which it is employed in war are accessories of this one, and must therefore be dependent on it[7]." The interest of its study is therefore immediately apparent to the historian, who may see in it, like Daniel Roche, "a revelation of all the problems encountered by the European cavalry".[8]

The morphology of the charge is based on the combination of three main principles: the choice of weapons used, the speed at which the charge is driven, the shock and the way it is designed. A change in one or more of these principles inevitably leads to a change in the charge. It is thus possible, by analysing the transformations that have taken place in the nature and balance of the three principles, to trace the history of the heavy cavalry. We will thus be able to question the way in which it has been able to evolve in order to eventually adapt to the transformations of the art of war, questioning its archaic and conservative character.

Our analysis could be based on the idea of the dynamics of "disruptions of equilibrium" developed by Clifford J. Rogers in his reflection on the military revolution. Rather than a single revolution, he prefers to evoke "a series of military revolutions, each attempting to remedy an imbalance introduced by the previous one[9]". This process would be marked by "abrupt and rapid changes, interspersed with long periods of stability"[10]. If we apply this analytical grid to the heavy cavalry charge, we could envisage that a dominant charge doctrine could be transformed if it is challenged by structural changes or individual initiatives modifying the pre-existing balance of power. Those amendments would introduce an imbalance which could only be corrected by a general adaptation of the doctrine of the charge. Of course, in our case, the speed of change must be

6 Jacques-Antoine-Hippolyte, Comte de Guibert, *Essai général de tactique*, édition de 1772 (Paris : Economica, 2004 [from 1772 edition]), p.112.

7 "Petit mémoire anonyme sur l'équestre de la cavalerie", 26 Février 1769, S.H.D./D.A.T., 1MR 1732, f°90.

8 Daniel Roche, *La gloire et la pouvoir, Histoire de la culture équestre, XVIe-XIXe siècle, Tome 2* (Paris : Fayard, 2011), p. 302.

9 Clifford. J. Rogers, "Military revolution of the Hundred Years War," in *The Military Revolution Debate: Readings on the Military Transformations of Early Modern Europe* (Boulder : Westview Press,1995), p. 57

10 Rogers, p.77.

put into perspective. The break is far from always brutal because the situation of imbalance sometimes sets in slowly, and reactions are also sometimes delayed.

From this perspective, we can envisage three situations of disruption of equilibrium that would structure our discourse. The first imbalance is the consequence of the introduction of fire into the practices of heavy cavalry from the middle of the sixteenth century. The second has its origins in the reforms introduced during the Thirty Years' War by the Swedish king Gustavus Adolphus. The latter is linked to the reforms of another warlord ruler, Frederick II of Prussia.

I. The introduction of fire led to the disappearance of the knightly charge

In the middle of the sixteenth century in Western Europe, the charge of heavy cavalry was still that of knights. The men-at-arms, nobles or nobly living, charged in hedges according to the technique of the recumbent spear; stuck under the arm. However, the development and generalization of a new weapon, the spinning wheel pistol, revolutionized cavalry combat and challenged the supremacy of men-at-arms. But even beyond this tactical upheaval, the reiters or "pistoliers", who were the first to use this weapon, also upset some of the fundamental values of the chivalric *ethos*.

The firearm is not a novelty in equestrian troops, light and irregular troops adopted the arquebus quite quickly. But these units are not intended to confront the men-at-arms on the battlefield and do not challenge their pre-eminence. Things changed with the spinning wheel pistol, the first examples of which date from the very beginning of the sixteenth century. This weapon is not without its flaws. For example, it is complex to build and maintain, and its range is limited: according to La Noue, firing is no longer very effective beyond three steps[11]. But it also has important qualities: its use is as simple as its mechanism is delicate, and its penetrating force is by no means negligible[12]. Above all, its weight and size make it usable on horseback. The rider can pull with one hand and keep the other to hold the reins. He can also take several of these pistols with him. Finally, while the gallop was essential for the man-at-arms in order to give his

11 François de la Noue, *Discours politiques et militaires* (Geneva : ed. F.E. Sutcliffe,1967), p. 360.

12 Modern tests have shown that the velocity of projectiles fired from a pistol at close range is impressive, and that at these same distances their accuracy is greater than that of long-barreled weapons; Bert S. Hall, *Weapons and Warfare in Renaissance Europe: Gunpowder, Technology and Tactics* (London : J. Hopkins University Press, 1997), p. 193.

Fig. 1, Wallhausen : weapons and equipment of the Cuirassier

Figg. 1-3 are from Johann Jacobi von Wallhausen (1580-1627), *Kriegskunst zu Pferdt*, darinnen gelehret werden, die initia und fundamenta der Cavallery, aller vier Theilen: Als Lantzierers, Kührissierers, Carbiners und Dragoens, was von einem jeden Theil erfordert wirdt, was sie praestiren können, sampt deren exercitien, Newe, schöne Inventionen etlicher Batailien mit der Cavallerey ins Werck zu stellen; Mit dargestelten Beweistumben, was an den edlen Kriegskünsten gelegen ...; Vormals alles nie an Tag gegeben, De Bry Jacobi, Franckfurt am Mayn, 1616. [Sächsische Landesbibliothek – Staats-und Universitätsbibliothek (SLUB) Dresden, gefördert von der Deutschen Forschungsgemeinschaft (DFG)]

spear thrust, this pace is no longer necessary for the reiter who does not rely on the shock effect. So they can make do with mediocre and less expensive horses.

Around this new weapon, new tactics are being put in place that aim to optimize firepower. The cavalrymen are grouped in massive formations: the squadrons. These can number up to 1500 or 2000 men[13]. Such numbers meant that the

13 Gaspard de Saulx, seigneur de Tavannes, *Nouvelle Collection des mémoires pour servir à l'histoire de France, par MM. Michaud et Poujoulat*, Tome VIII (Paris, 1838), p. 298.


Figu: 2. Par: 1. Cap: 1.

formations had to be very large. Tavannes mentions 15 to 16 ranks deep, and a front of 100 to 130 men. The most well-known tactic is, of course, the caracole[14]. It allows for continuous fire but is probably not feasible in all circumstances. There are other tactics derived from the caracole, which seem to be used at least as much: the essential principle is that the squadron advances towards the enemy, on his front or flank, and makes a general salvo before turning around and reloading. Finally, the cavalrymen could be satisfied with a preparatory salvo from the first two or three ranks before joining the enemy directly, counting on the thickness of their formation to prevail.

This technical and tactical evolution demonstrated the cavalry's ability to adapt. Initially, it was probably a question of finding a new solution to an old problem: the reinforcement of the defensive capabilities of the infantry, which adopted with the Swiss and then the lansquenets the square pikemen's masses. The cavalry could see the new weapon as a means of counteracting the "hedgehogs" of pikes. But this attempt to adapt to an external challenge quickly poses an internal problem for the equestrian arm. The massive squadrons of pistoliers would prove to be at least as effective, if not more so, against traditional heavy cavalry than against infantry.

As soon as they appeared in Charles V's army, the reiters asserted the superiority of their tactics against the men-at-arms. At Saint-Vincent, on 28 October 1552, German cavalrymen clashed victoriously with the French of Aumale. The light horses, mounted arquebusiers, and finally even the gendarmes were forced to yield to the bullets of the German pistoliers[15]. The failure was even more striking at Saint-Quentin, in 1557, where the gendarmerie of the Constable of Montmorency was once again powerless against the reiters. The men-at-arms charging in a hedge with their spears thus seem overwhelmed in the face of the new modes of combat. This inadequacy was confirmed during the Wars of Religion (1562-1598).

Such a questioning of the pre-eminence of the nobility among the equestrian troops could not fail to arouse strong opposition to this new weapon and the tactics that accompanied it. If some authors of memoirs or theoretical treatis-

14 I n the traditional caracole, known as the "processional", the front row first detached itself from the squadron and advanced towards the enemy. When he reached firing range, he made a discharge and the cavalrymen then immediately disengaged from the left to take up positions at the rear of the squadron and reload their weapons. Each row acts in the same way, ensuring a continuous fire.

15 Hans Delbrück, *History of the Art of War* (Lincoln and London : University of Nebraska Press, 1990), vol. IV, p. 126.

es seem to have measured fairly well the effectiveness and power of the new troops, the sources also reveal strong resistance, especially in France. Resistance first to the pistol, perceptible through the reluctance of the men-at-arms in the face of the servitudes of the weapon. This required rigorous maintenance, and the French men-at-arms were loath "to this base and servile occupation".[16]

Then there was resistance to the squadron. This is one of the main issues at stake in the famous XVth *Discourse* of La Noue. Indeed, some men of war, who were very attached to the "old custom", remained convinced of the need not to change it. It is therefore a question for the author to overcome their resistance, and to convince them "that the way in which we have observed up to this hour of arranging it [the cavalry] must be left in order to take that which reason leads us to follow as the best". [17]

The signs of resistance and difficulties in adapting are sometimes more tenuous and can be read through certain ambiguities in the discursive construction. Even the most lucid can sometimes hint at some rather significant hesitations. La Noue admits the usefulness of pistols, declaring them more effective than the lance. More generally, he also recognized that a squadron of reiters must prevail over a squadron of lancers. He adds, however, without fear of contradiction, that the spear remains a weapon perfectly adapted to the French: "all that I have discoursed is not intended to make the French despise spears, for I know that these are the weapons that are wonderfully proper to them." [18] It is not an easy task to question the identity of the French nobility, who are fundamentally attached to their spears and chivalrous tactics. Gentlemen were reluctant to give up their lance and the formation of a hedge, as these elements were fundamentals that had structured the chivalric *ethos* since the Middle Ages.

But beyond the technical and tactical aspects, it is also necessary to mention the social dimension of opposition to the new categories of mounted troops. As mentioned, the pistol is a very easy weapon to use. It requires little training, unlike the spear, which requires a long learning curve and continuous exercise. This is the reason why it is reserved for the nobility, who thus provide the bulk of the fighters of the heavy cavalry. On the contrary, any man can very quickly learn to shoot a pistol. The temptation is then great to equip a large number of ordinary soldiers with it, provided they know how to ride a horse, and to com-

16 La Noue pp. 361-362.

17 La Noue, p332.

18 La Noue, p.362.

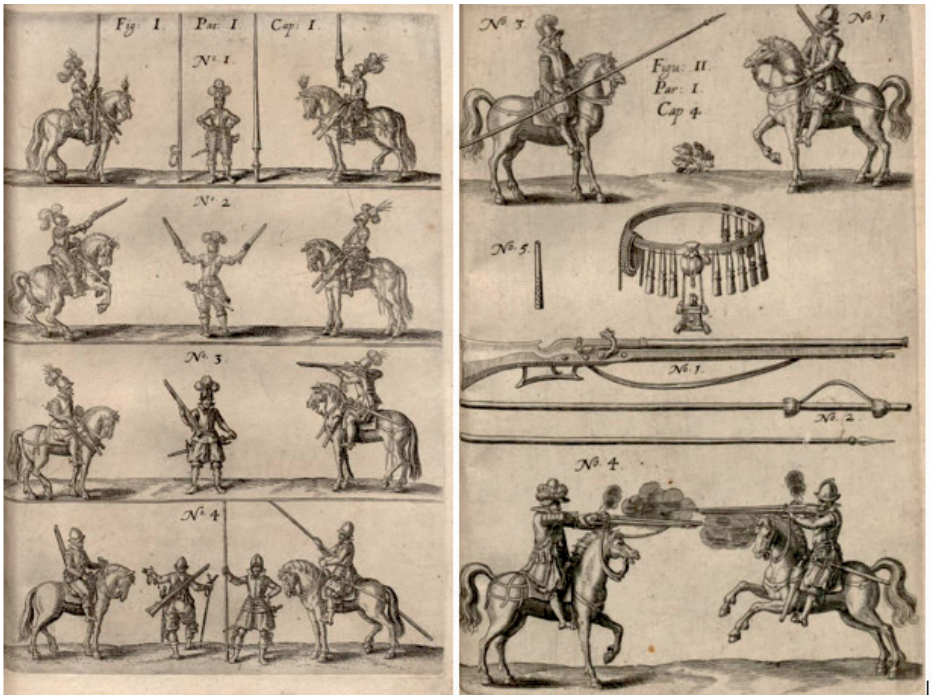


Fig. 2 Wallhausen: The four types of Cavalry: Lancers, Cuirassiers, Carbineers and Dragoons; The spear must pierce the chest of the enemy horse, the firearm aims at the forehead

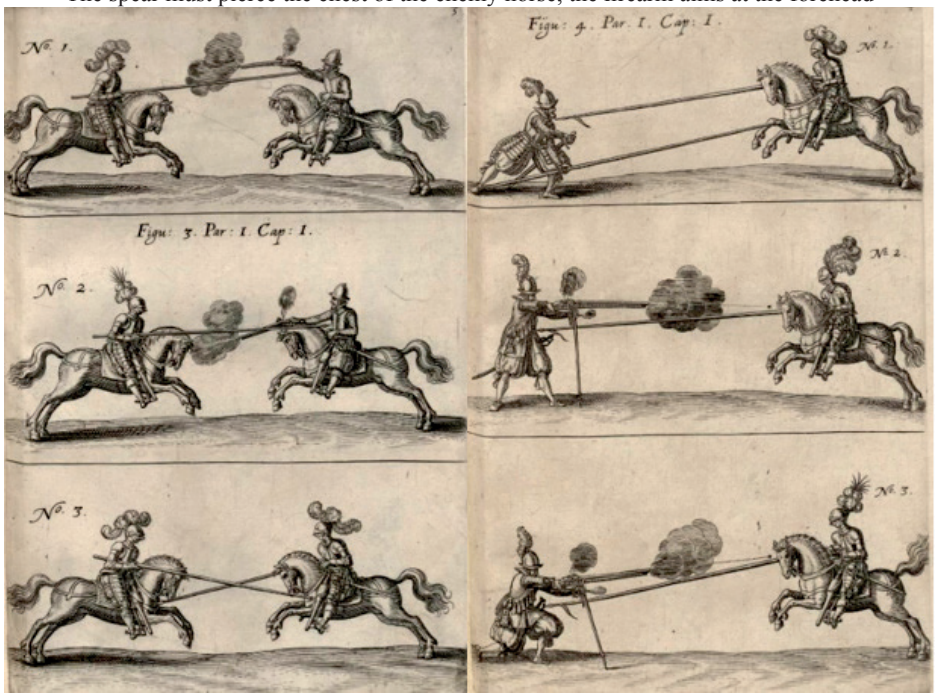
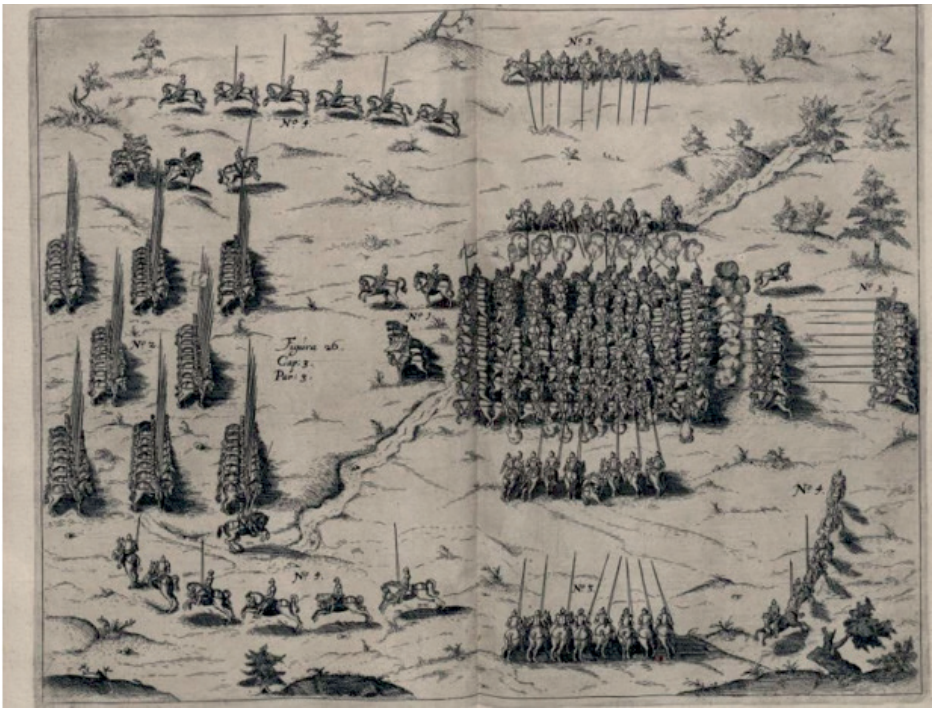


Fig. 3 Wallhausen: types of cavalry charge



pensate for the defects of the weapon by the mass effect[19]. From then on, the question, initially technical, also became social.

This social characteristic was noticed by contemporaries. Tavannes evokes these reiters, who make "their servants their companions".[20] Wallhausen was probably one of the most severe on these new cavalry troops. He contrasted very clearly the lancers, gentlemen of quality, with the "heavyweights" who were required for cuirassiers[21]. He regretted that the effect of numbers had been sought above all, at the expense of quality, and that the majority of cavalry units were now composed of "servants or vile scoundrels amassed from all sides to make the numbers". [22]

The attack is lively, fraught with prejudice, but significant. It refers to the image of cavalry, and more specifically heavy cavalry. The latter, the direct heir of chivalry, also embodies its values and those of the nobility. It may have seemed intolerable to some that the noble arm par excellence should be made up of men of low extraction, and that they should have the insolence to keep the true gentlemen in check.

Wallhausen was probably one of those who most clearly rejected the evolution of heavy cavalry. His aristocratic prejudices led him to produce a discourse that was out of step with the reality of war. He refuses to see that the reasons that made the nobility and singularity of the gendarmerie, the lance and the prize horse, are precisely those that condemned it. Although he changed the tactical formation somewhat, he continued to defend the superiority of the charge of the spearmen[23]. And this at a time when the spear has already almost disappeared. Obsolete depictions of Wallhausen continued almost until the middle of the century through the intermediary of certain authors, such as John Cruso in England[24].

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19 This is undoubtedly one of the elements that contributed to the "democratization" observed by Jean Bérenger in the French troops during the Wars of Religion. The nobles "have been definitively robbed of the monopoly of the profession of arms, even heavy cavalry is no longer a reserved domain for them." Jean Bérenger, "The French Armies and the Wars of Religion", *RIHM*, n°155, 1983, p.26.

20 Tavannes, p. 210.

21 Jean-Jacques de Wallhausen, *Art militaire à cheval, imprimé par Paul Jacques aux frais de Theodore de Bry,* (Frankfort, 1616), p.17.

22 Wallhausen , p.47.

23 Wallhausen, p.14.

24 *John Cruso's Militarie Instructions for the Cavallerie* was published in 1632, but was reprinted until 1641. Its influence goes even further, as it is widely reprinted in the 1661 edition of

These oppositions did not prevent the adaptation of the heavy cavalry, which took place on several levels. First of all, the French gendarmes, overcoming their reluctance, gradually changed their attitude towards the pistol. As La Noue noticed in the 1580s, "the gendarme also carries a pistole", which he uses when his lance is broken. And the gendarmes are even beginning to abandon the lance. The first to abandon it were the Huguenot gendarmes. The difficulty of obtaining valid spears undoubtedly had a lot to do with it, but the result was there: at Ivry (1590), Henri IV led the gendarmes to charge equipped with pistols and swords. Gentlemen adapt, while preserving the framework of the chivalric *ethos*. So there is no question of fighting from a distance, the salvo of the pistols has the function of preparing for hand-to-hand combat.

In 1603, Louis de Montgommery, in his *Milice françoise*, made absolutely no mention of the lance in the gendarme's armament. And when he describes the manner in which the gendarmes are to charge, he specifies that they will approach the enemy with a sword in their hands and a pistol in their scabbard. After firing their pistols, they must discharge their pistols at point-blank range and throw themselves at full speed at the enemy[25].

It is a good measure of how far we have come since the middle of the century. Not only was the French nobility forced to equip themselves with firearms, but they also had to abandon the lance, the weapon on which their specificity and prestige were based. Economic and social explanations certainly weigh quite heavily in this upheaval (difficulty in finding good horses, end of tournaments). But above all, gentlemen had to adapt to the new threat posed by fire. They had to change or die. Despite the arguments of Roger Williams and other even later theoreticians, such as Wallhausen, one cannot help but note the more or less rapid abandonment of the spear[26]. Its disappearance, which took place gradually in Western Europe, was probably earlier in the kingdom of France and the Netherlands[27].

Of course, the hedge formation could not survive the disappearance of the spear. Henry IV played an important role in replacing it with the squadron. Influenced by the example and thinking of some great captains, such as La Noue

William Barriffe's *Military Discipline or the young artilleryman*.

25 Louis de Montgommery, seigneur de Courbouson*, La milice Françoise, (*Paris : Corrozet, 1636, 1st edition 1603), p. 137.

26 Roger Williams, "A briefe Discourse of Warre," 1590, in John X. Evans (ed.), *The works of Sir Roger Williams* (Oxford: Clarendon, 1972), pp. 34-35.

27 Maurice of Orange was one of the first to abandon the lance, Wallhausen, p. 5.

and Coligny, he was personally convinced of the necessity of charging in squadrons[28]. He systematized the use of this formation and imposed it on the cavalry, first Protestant and then French.

However, while fire and squadron formation have become established, not all of the tactical practices that accompany them are effective. Henry IV, who perceived the strengths of the new modes of combat, also measured their limitations. The main one is related to the phenomenon of avoidance induced by the caracole and its variants. The use of fire allows for ranged combat and therefore dispenses with shock and hand-to-hand combat, which is inevitable with the spear. These practices are not only opposed to the chivalric *ethos*, but they are also risky in the face of a determined troupe. They were also likely to disrupt the order of battle, as Mayenne, the leader of the League's army, experienced at Ivry: the League's reiters collided with some of the League's gendarmes while making their classic U-turn to the left[29].

This is the reason why Henri IV, although he imposed the pistol on his gendarmes, only used it as a preparation for the shock. He also forbade his own reiters to practice their traditional caracole. Finally, he developed a practice already experienced by Coligny, having his squadrons accompanied by platoons of arquebusiers who provided appreciable fire support and prepared the charge by weakening the enemy before the shock[30].

These practices, adapted to elite troops such as gendarmes, were not within the reach of all cavalrymen. Poorly trained or newly raised troops did not have the ability or the will. They therefore relied on avoidance tactics. These tactics continued into the early seventeenth century.

II. Gustavus Adolphus and the changes of the Thirty Years' War.

At the outbreak of the Thirty Years' War, the great principles disseminated from the middle of the sixteenth century onwards had become the foundations

28 This is a point that is also underlined by propaganda texts, such as the *Discours vraiable,* an account of the battle of Ivry: "His said majesty, who has experienced in other battles and combats, that it is more advantageous to have the cavalry fight in a squadron than in a hedge, he divides all his said cavalry into seven regiments, ranged in as many squadrons." *Discours vrai de la victoire obtained by the king, in the battle given near the village of Ivry, the fourteenth of March, 1590* (Lyon, 1594), p.10. For an analysis of the Battle of Ivry, see Hervé Drévillon, *Batailles, scènes de guerre de la Table Ronde aux Tranchées* (Paris : Seuil, 2007), p.97-115.

29 Frédéric Chauviré, *Histoire de la cavalerie* (Paris : Perrin, 2013)*,* p.109.

30 Frédéric Chauviré, «'Only a light cavalry officer'? Henri IV chef de cavalerie», *Revue Historique des Armées*, Service Historique de la Défense, n°277, 2015, p.22.

of the charge. It is generally driven at a trot, the dynamics of the offensive movement are reduced to very little. The riders gain a decisive advantage by their fire and only mingle – when this happens – when one of them has already folded. This was expressed by the Prince of Anhalt, who commanded the army of the Bohemian States at the Battle of the White Mountain (1620). He rails against his riders:

> Most of our cavalry troops have not been willing to mingle, as I have often preached to them, rejecting the bad custom of caracole, [...] and I put this expressly here, in order that we may hate the custom of going to the charge without meddling like the plague[31].

The majority of units probably charge at a walk or trot, pistol in hand, avoiding shock and hand-to-hand combat. Since the enemy follows the same type of practices, there is no urgency to change the doctrine, a kind of balance has been established. It was this balance that was disrupted by the Swedish king Gustavus Adolphus (1617-1632).

Before intervening in the war against the Habsburgs in 1630, the king profoundly transformed his cavalry. His reforms took into account both the endogenous contingencies weighing on the Swedish cavalry (difficulty in supplying pistols, weakly armoured cavalry) but also his experience in wars against the formidable Polish cavalry. Having inherited a doctrine based mainly on fire and a slow pace, Gustave will restore mobility and shock power to his cavalry.

First of all, he diminishes the importance of fire. Reporting Gustavus' instructions to his riders, von Chemnitz writes that:

"Only the first or at most the first two ranks, when they were near enough to see the whites of their enemies' eyes, were to draw, and then take up their swords; The cavalrymen of the last rank, however, were to attack without firing but with their swords raised, and keep their pistols for the fray[32]."

After Breitenfeld (1631), the king further limited the use of fire by prescribing that his cavalrymen could not fire until they had received the enemy's discharge themselves[33]. So the fire has not disappeared, but it is no longer the core of the doctrine of charge. It is now a question, in the first instance, of disorga-

31 Relation of the Prince of Anhalt, quoted by Olivier Chaline*, La bataille de la Montagne Blanche, un mystique chez les guerriers* (Paris : Noesis, 1999), p.158.

32 B.P. von Chemnitz, *Königlichen Schwedischen in Teutschland geführten Krieg*, Vol. I, 1648. Quoted by Richard Brzezinski, *The Army of Gustavus Adolphus, vol.2 Cavalry* (Oxford : Osprey Publishing, 2003), p. 23.

33 Brent Nosworthy, *The Anatomy of Victory, Battle Tactics 1689-1763* (New York : Hippocrene Books, 1990), p. 23.

nizing the enemy squadron by a volley of "preparation" and, in a second stage, of taking advantage of the confusion thus created to dislocate it with the sword. The King of Sweden actually remained convinced that fire could play an important role in disorganizing the enemy, but he thought it was counterproductive to ask the cavalry to perform this function alone. This is why he had his squadrons accompanied by troops of musketeers who delivered their salvo before that of the cavalry. In this way, it "externalizes" the fire. These solutions are very similar to those put in place by the Protestants and Henry IV at the end of the Wars of Religion. It is not impossible that Gustavus, also a Protestant, may have been aware of these practices.

The diminishing role of fire is accompanied by a relative acceleration in the speed of charge. First of all, the Swedish cavalrymen had only a defensive armament that was light enough for the criteria of the time, so the best way to limit the losses caused by the enemy's fire was to outspeed him. The faster you get closer to the enemy, the less time you remain exposed to his salvos, and the more difficult it is for him to adjust[34]. The principle of speed is also necessary if we consider that the king intends to base the success of the charge on the shock. Finally, it should be remembered that the King of Sweden was the first to significantly reduce the depth of his squadrons, which is a definite advantage for a fast pace. It is obviously easier – or less difficult – to lead a squadron of three or four ranks at a gallop than another in eight, the order and cohesion of the unit are less threatened.

However, some authors consider it unlikely that the Swedish cavalry actually charged at a gallop. It should be remembered that this is the opinion expressed by Michael Roberts: "the final approach of the cavalry . . . was closer to a trot than a gallop[35]." Colonel Gyllenstierna also thinks that the cavalry attack did not reach this pace, and did not seek to make full use of the horse's speed[36]. The two authors explain this in particular by the constraints induced by the use of small troops of musketeers placed between the squadrons to provide them with fire support. This tactic implies that musketeers and cavalrymen march together, at the same pace, at least until the infantrymen have come within firing distance.

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34 J. Roemer, *Cavalry, its history, management and uses* (*New York*, 1863), p. 324. Mentioned by Nosworthy, p. 23.

35 Michael Roberts, *Gustavus Adolphus* (London-New York : Longman, 1992), p. 107.

36 Colonel Ebbe Gyllenstierna, "Henri de Turenne et Charles-Gustave Wrangel. Stratégie et tactique pendant les dernières années de la guerre de Trente Ans", *Turenne et l'art militaire, Actes du colloque international,1975* (Paris : Les Belles lettres, 1978)*, pp. 204-205.*

It should also be taken into account that maintaining the gallop over a long distance requires extensive training. It is therefore probable that the Swedish cavalry could at best gallop through only in the final moments of the charge. According to E. Gyllenstierna and M. Roberts, it was only allowed to advance at a trot at a distance of 50 yards from the enemy.[37] Robert Monro's account of the Battle of Breitenfeld is again useful and fully illustrates the earlier observations: "at close range our musketeers greeted them [the enemy's cavalry] with a salvo, then our cavalrymen discharged their pistols and then charged.[38]" Knowing that the Musketeers made their discharge at about 20 paces and that it took a few more steps for the squadrons to increase their speed and reach the gallop, this one could only be brief [39]. Of course, under certain circumstances, Gustavus was able to employ his cavalry without adding the musketeer groups. This configuration could be found, for example, in Lützen (1632) if we are to believe the Count of Brézé[40]. In such conditions, the obstacle represented by the musketeers is removed and the riders can then more easily gallop. The increase in speed was also a significant alternative for squadrons deprived of their fire support.

The changes made by Gustavus Adolphus in the field of fire and gait legitimately lead us to think that the place of shock in charge also underwent a profound renewal. At the beginning of the Polish Wars Swedish tactics relied mainly on avoidance, but contact with the formidable Polish cavalry convinced the king to adopt a more offensive and aggressive doctrine, forcing his cavalry to join the enemy. As Roberts explains, the role of fire could no longer be to achieve victory, but to pave the way for shock and hand-to-hand combat, which alone could achieve victory[41].

Gustavus Adolphus had evidently realized that the decision could only be made by going to approach the enemy, and not by avoiding him. His personal authority and the discipline of the Swedish army no doubt enabled him to persuade his cavalrymen to abandon their reliance on firearms and evasive manoeuvres. The task was more difficult for the German mercenary regiments. They sometimes found it difficult to conform to Swedish standards of military discipline. But the king was too convinced of the necessity of such a reform for

37 Gyllenstierna, p. 204. Roberts, p. 106

38 Munro, p; 65; Quoted by Nosworthy, p. 33.

39 Comte de Brézé, *Observations historiques et critiques sur les commentaires de Folard et sur la cavalerie*, (Turin, 1772), Volume II, p. 148.

40 Brézé, p.148.

41 Roberts, p.105.

them not to comply. They therefore had to "relearn" warfare in the Swedish way, supervised by Swedish officers. Israël Hoppe recounts, for example, that in September 1628 Beaudissin's regiment, which had recently arrived, showed "only a faint desire (as is the custom among the Germans) to fight." Gustavus Adolphus remedied this evil by strictly imposing on them to charge thoroughly[42].

Is it possible to measure the impact of the Swedish reforms on the doctrine of the charge of Western European cavalry, especially with regard to the re-evaluation of shock at the expense of fire and the avoidance tactics inherited from the caracole and its variants? If we look at his German opponents, it seems that at the beginning of the war only elite units, such as those of Piccolomini or Pappenheim, sought to join the enemy in order to push him with shock. Most relied exclusively on fire and practiced avoidance in one way or another. For many German mercenaries, who possessed a valuable horse and the promise of a career, there could be no question of risking shock and hand-to-hand combat lightly. They were in fact content to discharge their pistols in the direction of the enemy and, "considering their duty accomplished, turned to the rear leaving the next rank to run the risk. The charges often degenerated into a caracole[43]." Against such enemies, Gustavus Adolphus' cavalry had a considerable advantage.

Some generals were well aware of the shortcomings of this tactic, but to bring about real change involved a great effort of coercion, discipline and training. An effort that they considered all the less necessary to undertake since, since all the cavalry of Western Europe acted in the same way, none of them really had a clear superiority. The evolution therefore came from the imbalance produced by the arrival of Gustave. This is likely to be evidenced by a memorandum sent by Wallenstein to his lieutenants in January 1633. In it, he drew lessons from Lützen (1632), proposing, for example, that German cavalrymen should be forbidden to use carbines, because "after firing they turn their bridles, which causes a great deal of disorder[44]"; it should be noted that Gustavus Adolphus had made the same innovation in his own cavalry as early as 1621. Wallenstein therefore intends to do away with the practices inherited from the caracole, which can no longer be tolerated in the face of an enemy that systematically charges vigorous-

42 Israël Hoppe, *Geschichte des ersten schwediscen-polnischen krieges in Preussen*, (Leipzig, 1887), quoted by Brzezinski, *The army of Gustavus Adolphus*, p.24.

43 Brzezinski, *The army of Gustavus Adolphus*, p. 24.

44 R. Brzezinski, *Lützen 1632, Climax of the Thirty Years's War* (Westport-London : Praeger, 2005) , p. 90.

ly and while seeking contact[45].

It is easy to understand that the German cavalry, because they were his direct opponents or fought on his side, adopted the innovations of the King of Sweden rather quickly. But the Allied countries, more or less distant, also benefited. If only through officers who had served with the Swedes. In France first of all. After a rather inglorious beginning, the cavalry benefited from the skill of Gassion, who served in Gustavus' army until 1635. It is conceivable that the integration of the Weimar regiments into the Royal Army[46] also facilitated the adoption and generalization of the main features of the Swedish-style charge.

In England, the doctrine of charge was turned upside down during the Civil War by Prince Rupert (1619-1682), who also fought on the continent with the Swedes before joining the camp of his uncle Charles I. He introduced Swedish characteristics into the royalist cavalry, sometimes even going so far as to abolish the use of fire. The horsemen of Parliament would then partially align themselves with the practices instituted by Rupert[47].

The King of Sweden also played a role in the evolution of the doctrine of the use of cavalry on the battlefield. In the second half of the sixteenth century, it was customary to intersperse battalions and squadrons, usually in a single line with possibly some reserves. A first evolution can be seen with Maurice of Nassau at the turn of the sixteenth and seventeenth centuries, and this accelerated with the beginning of the Thirty Years' War. This transformation was linked to the strengthening of the infantry's defensive capabilities, which relied on the formidable combination of pikes and muskets. Generals then tended to group the infantry in the center to make the best use of their firepower. But this reinforcement of the center leads to a relative paralysis on this part of the system and pushes to look for the solution on the wings[48]. The pattern of the "battle of wings" is then put in place. It was still in its infancy when Gustavus Adolphus

45 Caracole was also condemned by Montecuccoli in his Sulle *Battaglie*, an evocation of the battles of the first half of the 1630s. Thomas M. Barker, *The Military Intellectual and Battle. Raimondo Montecuccoli and the Thirty Years War*, (Albany-New York : State University of New York Press), 1975, p.108-110.

46 Duke Bernard of Saxe-Weimar (Bernhard von Sachsen-Weimar 1604-1639) first joined Gustavus Adolphus before joining the service of France in 1635 with his 16 regiments of great value.

47 Frédéric Chauviré, *The New Knights. The Development of Cavalry in Western Europe, 1562-1700* (Warwick : Helion & Company, 2021), p.113-116.

48 David A. Parrott, "Strategy and Tactics in the Thirty Year's War," in *The Military Revolution Debate, pp. 234-235.*

intervened in the Thirty Years' War, and the King of Sweden improved it and showed all the benefits that could be derived from cavalry in such a tactical setting. The Battle of Breitenfeld (1631) is a very good illustration of this. His adversary Tilly arranged the Imperial army by grouping most of the squadrons on the wings, according to the new scheme. However, his squadrons are massive and heavy, and he has deployed all his units in a single line, without reserve. On the contrary, the King of Sweden organized his army in two lines with a reserve, with the Saxon allies occupying the left wing. On the other hand, its squadrons are thinner and more mobile. At the beginning of the battle, the inexperienced Saxons were first swept away by the Imperials. But on the right wing, the Swedish squadrons exploited their greater manoeuvrability and two-line arrangement and put the Imperial squadrons to flight. Gustave then exploited this first success. The king's use of his cavalry is a model of its kind. While a few squadrons pursued the fugitives, the rest of the cavalry on the right wing launched into a double movement. The first line gained the heights overlooking Tilly's rear and seized its artillery, which was immediately turned against its former owners. The second line made a conversion and attacked the flanks and rear of the Imperial infantry[49].

Thus the model of the battle of the wings was set up, in which the cavalry played an essential role. Grouped on the wings, in two lines, the squadrons can decide the fate of the battle. Whichever of the two opponents manages to win on the wings can turn against the center, which can then only try to leave the battlefield without too many casualties. If each of the two opponents achieves a success on one of the wings, the victory is actually obtained by the one of the two who manages to take advantage of it and exploit it to the fullest. This pattern of the battle of wings was to continue without major change until the end of the eighteenth century.

Although it is not a real revolution, the reforms introduced by the King of Sweden were a real change from the practices most commonly followed at the time. At the very least, they represented an acceleration, a systematization of trends that were already underway. Thus the cavalry charge and its role on the battlefield could no longer be considered in quite the same way after Gustavus Adolphus. He favoured the establishment of a new model of office, which was the dominant paradigm until the reforms of Frederick II necessitated a new adaptation in the eighteenth century.

49 Philippe-Henri de Grimoard, *Essai théorique et pratique sur les batailles* (Paris : Desaint, 1775), p.124-125; Chauviré, *The New Knights*, p.191-197.

Fig. 4, A type of charge, from Fig. 4 is from John Cruso (d. 1681), *Militarie instructions for Cavallrie: or rules and directions for the service of horse*, collected out of divers authors, ancient and moderns, and rectified and supplied, according to the present practise of the Low-Countries warres, Printed by the printers of the Universitie of Cambridge, MDCXXXII, [cc. 128-129].

III. Europe in the school of Frederick II

The doctrine of the use of cavalry did not change after the Thirty Years' War. Squadrons are still mostly grouped at the wings, usually in two lines. It is therefore in line that they charge according to the codes of a "ballet" with elementary choreography: the first line if it is pushed back takes shelter behind the second, which in turn charges and comes to reform behind the first in case of failure. On the other hand, the morphology of the charge undergoes a slow evolution. The necessity of firing before joining the enemy with sword in hand was increasingly criticized, and it seems that at the end of the War of the Spanish Succession (1702-1713) the English, French (partially) and Swedish cavalry gave up on it. However, the gait favoured by most is the trot, for reasons related to the poor equestrian skills of the riders and the dominant conception of the shock. These were all subjects that Frederick II's reforms were to turn upside down.

It is indeed to the King of Prussia that we must attribute the innovations that will make the Prussian cavalry the best in Europe. While his father bequeathed him infantry of very high quality, the same cannot be said of the cavalry. The first battle of the War of the Austrian Succession (1741-1748), Mollwitz (1741), was a considerable shock. The cavalry failed completely, and the king owed the final victory, in extremis, only to his infantry. He therefore immediately set about radically transforming his cavalry. Aided by brilliant cavalrymen such as Seydlitz, Ziethen and Winterfeldt, [50]Frederick was able to give himself the means to reform the Prussian cavalry. The morphology of the charge was then profoundly transformed to forge a formidable weapon that the king expected to be able to play a decisive role on the battlefield.

It was in Sweden that Frédéric seems to have found the model on which to base his renovation work. Charles XII had indeed been able to build a high-quality cavalry by applying radical principles: charging exclusively with bladed weapons and gallops. According to General Warnery, it was the example of the Swedish sovereign that convinced Frederick II that " the real advantage of a squadron consisted in the impetuosity of its shock, in the order it keeps and in its dexterity in wielding the sword".[51]

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50 General Hans Karl von Winterfeldt (1707-1757), confidant of Frederick II, who made him his personal representative to the Prussian generals and also entrusted him with diplomatic missions. General Hans Joachim von Ziethen (1699-1786), he was, along with Seydlitz, Frederick II's most brilliant cavalry commander. He particularly distinguished himself with the hussars, his original weapon

51 Charles-Emmanuel de Warnery*, Remarques sur la cavalerie* (Paris : Anselin, 1828), p.35.

However, he understood that no reform could succeed without the establishment of high-quality individual and group training. This was his first great innovation, no other cavalry had carried instruction and drill so far[52]. These advances in training education allowed him to take paths as radical as those of his model.

He begins by prohibiting the use of fire in the charge. For him, charging exclusively with the sabre was one of the keys to the success of cavalry attacks. Thus, if two detachments of cavalry of equal size meet, the victory should go to the one who has the best men and horses, attacks the most furiously, and who, "sabre in hand, will fall upon the enemy after having received his first fire without being frightened[53]."

He then imposed the gallop as the usual gait of the charge. His desire to break away was based on the conviction that galloping was a considerable asset for the cavalry. His thinking led him to establish a relationship between the morale of the riders and the pace of the attack. Specifically, trotting seems to have negative effects on men's morale. According to him, the main disadvantage of this slow pace is that it gives the rider time to think. This gives him an opportunity to think about danger and try to avoid it. "I lead my squadrons to the charge at full gallop," said the king, "because then fear carries off the cowards with the rest; They know that if they hesitate in the middle of the rush, they will be crushed by the rest of the squadron[54]."

The gallop thus constrains the cowards, but it also allows the others to somehow disregard the danger, carried away by the intoxication of the charge. Pierre Cantal, at the beginning of the twentieth century, gave a perfect account of the principles underlying this doctrine. "The rider who wants to charge at full speed pokes his nose into his horse's mane, puts his spurs in his belly, and screaming so as not to hear, closing his eyes so as not to see, throws himself in front of the shock as one rushes into the void, without thinking. This is the real charge. that of the drunk man on the packed horse[55]." At this crucial moment of the charge, when tension is at its peak and fear can cause the attack to fail, the adoption of a very fast pace may appear as a means of sustaining the morale of the Prussian cavalry while shaking that of his opponents. Progress seems to be very rapid.

52 Chauviré, *Histoire*, pp.220-225.

53 Frédéric II, *Instructions militaires secrètes pour ses généraux, Bibliothèque historique et militaire réservés à l'armée et à la garde Nationale de France*, publié par Liskenne et Sauvan, Tome V (Paris, 1844), p. 290.

54 Quoted by B. Nosworthy, p. 168

55 Pierre Cantal, *Etudes sur la cavalerie* (Paris : Lavauzelle, 1905), p. 40.

As early as 1742, the Prussian squadrons galloped 100 paces from the enemy. In 1744 it was 200 paces, at the end of their race the riders had to give away at full speed. The extent of this innovation can be gauged if we remember that, at the same time, most European cavalry only dared to take a great trot, and 20 paces from the enemy. In 1755 the scarcely believable distance of one kilometre six hundred was reached, the last 540 metres at full speed[56].

Frederick's orders concerning the prohibition of fire on horseback and the adoption of the gallop make it easy to guess that he could not have been in accordance with the way in which the majority of the cavalry of that time approached the shock. These, like Marlborough during the War of the Spanish Succession, considered that physical impulse should be sacrificed to the strength of the squadron. The shock, therefore, when it took place, rested almost solely on the solidity of the ranks, on the strength of the horses, that is to say, the mass or weight of the squadron. For Frédéric, on the contrary, it was imperative to rebalance the two key elements of the shock.

Without sacrificing cohesion – the riders had to charge knee to knee – the new king decided to increase the gait considerably. It is true that the gallop has a number of advantages in the perspective of the shock. One of the most important, as we have seen, is undoubtedly that it makes it possible to lead men more safely to contact. The other advantage is more directly mechanical: launched at a high speed, cavalrymen can more easily jostle their opponents and penetrate their ranks.

From a theoretical point of view, however, launching at full speed towards the opponent raises a significant problem. Because of the energy released by the impact of two squadrons colliding at this speed, the destructive effect must have been as deadly for one as for the other. The first part of the answer lies in the fact that Frédéric knew that it was possible to win the decision *before* the shock. For this reason, when he began to reform his cavalry, he recommended that the speed be increased when the squadron was within 50 paces of the enemy. It is at this point that one of the two opponents usually recognizes his inferiority, deflects, slows down his movement, or breaks. This conviction that he could prevail before contact was based on the belief in the considerable psychological impact that the Prussian charge had on the enemy's morale[57]. The

56 Nosworthy, p.179.

57 It illustrated the principle that Ardant du Picq would later express in an even more radical way: "The very authors who come to tell you that two squadrons never clash write to you to satiety: the strength of the cavalry is in the clash; in the terror of shock, yes; In shock, no; in

second element is more pragmatic. Frederick knew that he had only to deal with cavalry which charged, for the quickest, at the maximum at a great trot. Under these conditions, the galloping charge did not prove suicidal, but on the contrary brought a shock force that represented a real advantage for the Prussians.

The third element marks a certain originality in relation to Charles XII and reveals one of the King of Prussia's major concerns: to prevent the charge from degenerating into a multitude of individual battles. In a prolonged melee the officers would lose control of their men, the outcome of the fight would rest entirely on the cavalry, "the soldier would then decide the question, and one cannot depend on that[58]." "My intention," he explained to the Comte de Gisors, "is to break the enemy by the speed of our charges even before we come to hand-to-hand combat; In the fray the officers are no more than enlisted men, and order and cohesion are lost[59]." Frederick is equally clear in his *Instructions*: "As long . . . that the squadrons are well closed, it is impossible to come to hand-to-hand combat. These squadrons are unable to mix, since the enemy being more open than we are and having more intervals, he is unable to resist our shock[60]."

The transformations brought about by Frederick II in the doctrine of the use of cavalry were probably less revolutionary than those he introduced in the morphology of the charge. It should be remembered that, in the now classic framework of the battle of wings and the charge in line, the squadrons were gathered at each wing and arranged in two lines. The former usually includes more squadrons than the latter. The distances between the squadrons of the first line were therefore about 24 paces, compared to 45 or 50 paces (the front of a squadron) for the second[61]. The two lines are themselves about 150 toises apart. The lines are engaged one after the other according to the "ballet of lines" scheme. However, beginning with the War of the Austrian Succession, Frederick II introduced several notable changes that aimed to improve this routine system.

First of all, its essential actions in the field of training, exercise and manoeuvres have contributed to a considerable acceleration of the charge in line.

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the resolution, then, and nothing more; a matter of morality, not mechanics." *Etudes sur le combat* (Paris : Economica, 2004), p. 254.

58 Quoted in Delbrück, p. 282.

59 Quoted by Nosworthy, p. 168.

60 Nosworthy, p. 169.

61 S.H.D./D.A.T., 1MR 1758, f°71, "Mémoire pour les officiers de la gendarmerie", 1746; S.H.D./D.A.T., 1MR 1734, f°83, "Projet d'instruction sur les évolutions et exercices de la cavalerie", par M. de Mortaigne.

The deployment of squadrons in the line of battle, firstly, is done much more quickly. The Prussians had indeed abandoned the processionary deployment. Squadrons in columns line up obliquely across the space in front of them to take their place in the line of battle[62]. Such a maneuver saves a considerable amount of time, and thus gives the possibility of outpacing the enemy[63]. On the other hand, the very high level of training (both individual and collective) of Frederick's cavalrymen greatly facilitated the march towards the enemy. It is no longer necessary to advance at a walking pace, to stop the line regularly to correct the alignment of the squadrons and avoid fluttering and breaches. Finally, the pace of the charge in line increased very markedly, the Prussian squadrons were able to charge at full gallop where most of their opponents, in order to preserve the cohesion of their line, contented themselves with a great trot. According to Brent Nosworthy, such was the skill of the Prussian cavalry that it was possible, as early as the peace manoeuvres of the 1750s, to have a line of 30 or 40 squadrons charged at a gallop, with no intervals between them and maintaining perfect order throughout the charge[64].

But Frederick not only sped up the course of the charge in line, he also made somewhat more profound changes in the organization of the cavalry wings. First of all, there was a relatively new use of light mounted troops, hussars and dragoons. Indeed, while generals were often reluctant to use them in line alongside cavalry, the King of Prussia was convinced that these troops had a role to play on the battlefield. The evolution of the doctrine of the Prussian charge facilitated their integration. The shock effect is now considered one of the essential elements of victory. It must be achieved by the combination of weight and speed. However, if the hussars could not compete with the heavy cavalry in weight, the qualities of their horses allowed them superior speed. Considerable efforts were therefore made in the Prussian army, under Winterfeldt and Ziethen, to make the hussars and dragoons an effective force on the battlefield. However, the use of these troops within the cavalry wings led to a slight modification of their tactical arrangements. Due to their characteristics, hussars and dragoons each occupy a different place.

The front line was of course reserved for the cuirassiers, who had the advan-

62 This maneuver was adopted by the French cavalry after the Seven Years' War. It is explained, for example, and justified in *the Instruction pour les Gardes du corps du roi* of 1766 (Beauvais : Desjardins, 1767).

63 Warnery, p.118-124.

64 Nosworthy, p167.

tage in the clash. The dragons are in the second line, about 300 paces away. It was up to them to support the cuirassiers if they were put in difficulty, or on the contrary to exploit the first success achieved by the latter. Finally, the hussars were on the outer flank of the wing and in reserve. The first of these two positions is accompanied by a real tactical innovation. Contrary to the usual order, the hussar squadrons were not deployed in line, but usually stood in column[65]. This arrangement allowed them to intervene quickly on the enemy's wings. Thus placed, the dragoons and hussars were to play a considerable role in most of the battles fought by Frederick II. The Bayreuth dragoons became legendary during the Battle of Hoenfriedberg (1745).

Finally, Frederick II set about developing flank attacks by exploring new avenues. The squadrons of hussars placed in column on the flank of the wing played an important role. Breaking away at a gallop, still in column, they gained the flanks of the enemy. There, by a simple shift conversion to the left or right, they deployed in line and were ready to charge[66]. This manoeuvre could also be carried out by an entire wing, including cuirassiers, it was then a "march by line".[67] It was by manoeuvring his cavalry in this way that Seydlitz decided the victory at Rossbach (1757).

In addition to the march in line, another category of flank attack developed by the King of Prussia can be applied to cavalry: the oblique attack. The first form of oblique attack applies equally to cavalry and infantry, and that is the echelon attack. This involves dividing the line into several sections, each consisting of one or more squadrons. These sections advance towards the enemy at an offset from each other, which makes it possible to refuse one of the wings of the line and to attack the enemy with the other, which has been previously reinforced. In this system, the squadrons of the line are no longer all engaged at the same time, as the traditional line charge dictates, but one after the other. This is how the Prussian cavalry acted at Leuthen (1757).[68]

But the oblique attack can also be done in two other ways, which apply more specifically to cavalry: the oblique step and the head-to-boot. In both cases, the

65 Warnery, p.126, 159.

66 Warnery, p.126.

67 Which can also be applied to an entire army: The army is first drawn up in two lines, parallel to the enemy's position, and then, by a simultaneous quarter conversion of all units, each of the lines is transformed into a column. These columns then very quickly gained one of the enemy's flanks. They were then redeployed by a new quarter conversion which reconstituted the initial lines, this time along an axis almost perpendicular to the enemy.

68 Warnery, p.150.

aim is to make the riders follow a diagonal line in relation to their starting position. The difference between the two manoeuvres lies in the degree of openness of the angle formed by the starting line and the diagonal marking the march of the riders. Whatever manoeuvre is performed, the main consequence will be to shift the squadrons to the side that has been chosen. This shift will make it possible to outflank the enemy line, a manoeuvre with a tactical and moral effect that is always considerable[69].

The different categories of oblique attacks represent the only real changes to the traditional charge in line pattern. It must be admitted, however, that, if the lines are sometimes oblique, it is always a question of making them fight successively. When the first line of cuirassiers galloped along, the second line, composed of dragoons, followed them at a trot and awaited the outcome of the fight, striving to keep a distance of 250 to 300 paces[70]. Depending on the situation, the second line can then let the routed front-line squadrons pass and charge back to stop the enemy, or exploit the success of the victorious front line. Thus we find in the end, even among the Prussians, the famous "ballet" of lines and squadrons, the traditional mark of the charge in line.

Conclusion:

Far from seeing the definitive disappearance of the cavalry, the sixteenth century actually coincided with the beginning of a process of transformation and adaptation on a scale that had probably never been seen before. The dynamics of this process are based mainly on the disruption of equilibrium brought about by technical evolutions or bold reforms. In each case, these led to major changes in the morphology of the charge and in the doctrine of use of the cavalry. Cavalry's ability to adapt has thus enabled it to play a central role on the battlefield throughout the early modern era. Cavalry as it appeared on the eve of the French Revolution, after the reforms of Frederick II, was undoubtedly at its peak.

69 Louis de Drummond, Comte de Melfort, *Traité sur la cavalerie* (Paris :Desprez, 1776), p.154.

70 Nosworthy, p. 310.

Swiss Cavalry from c.1400 to 1799

by Jürg Gassmann

Introduction

On 15th September 1972, military Switzerland bade good-bye to its cavalry, the last armed forces in Europe to do so. The event drew a line under a relationship that had been fraught until the cavalry came under the purview of the Federal military authorities with the centralised military organisation of 1850.[1]

In the military history of the Late Middle Ages to Napoleon, the Swiss are renowned for their infantry, especially the heavy infantry *Reisläufer* from the time of the Burgundian Wars in the 1470s to the Italian Wars in the early sixteenth century. Swiss cavalry is hardly ever mentioned, and it is not unusual to find the statement that the Swiss expertise in heavy infantry obviated the need for an effective cavalry.

This chapter will show that the Swiss were only too keenly aware of the need for a combined arms capability, and of the essential role of cavalry in that paradigm. And yet, military Switzerland consistently fell short of that ambition. We shall discuss why that was so, and how the Swiss sought to remedy the problem. Due to space limitations, I shall concentrate on the military challenges facing the Swiss and on the political constraints they imposed on themselves, leaving aside details of tactics or equipment. Also, each of the Swiss cantons was different, there was no common solution; again, due to constraints, I have focused our largest canton, Berne.

Heavy Cavalry, Light Cavalry

Cavalry are usually classified into heavy cavalry, with at least some armour and fighting with a heavy sabre (e.g. cuirassiers) or heavy lance; light cavalry,

1 Rosemarie Brunner, *Die Abschaffung der Schweizer Kavallerie 1945-1972*, licentiate thesis in history Zurich University 2014, < https://www.alexandria.ch/permalink/41BIGINST/kqb8rv/alma9925904898101791 >; the new federal military organisation was the occasion for Louis Rilliet de Constant, *Vues sur la cavalerie Suisse* (Berne, J. Dalp, 1851).

unarmoured and armed with a light sabre or light lance (e.g. hussars or lancers); and light horse, who moved mounted and used a carbine to fight on foot.

The ideal-typical application of heavy cavalry is on the battlefield, allowing commanders to project and rapidly concentrate force at a point of their choosing in order to create, exploit, or deny opportunities. Such cavalry might be despatched to disrupt an infantry advance or a cavalry charge, disable field artillery, exploit disarray in an opposing formation, or pursue and harry a fleeing enemy.[2] Until the advent of viable battlefield vehicles in the early twentieth century, horse-mounted troops remained the only tool available to commanders for that purpose, even as the greater range, precision, and firing cadence of infantry long arms shifted the confrontational advantage to the infantry.

To be effective in this function, heavy cavalry must operate in large numbers, at least several hundred – Guderian's adage *nicht kleckern, sondern klotzen* applies.[3] This in turn means that they must train in these large formations, so that both the horses and the troopers internalise the formations and evolutions to the point of automaticity, and are capable of performing them under fire. These skills can only be acquired in a military setting, where the men and horses can be exposed to the sight, sound, and smell of rifle fire and artillery, they cannot be trained in a civilian setting.[4]

Light cavalry's job, by contrast, is primarily reconnaissance and liaison – they are the commander's eyes and ears.[5] They operate in small units, a troop of twenty, and aim to remain undetected. When they fight, it is in the nature of skirmishing and with the intent of extricating themselves; the intelligence they have gathered is useless to the commander unless they return to him to report. Both the training and skills required of the light cavalry trooper are therefore different from that of his heavy cavalry counterpart – large unit formation training is less relevant, but individual resourcefulness, daring, and horsemanship are crucial, all skills a trooper might bring from civilian life.[6]

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2 Rilliet de Constant, *Cavalerie Suisse*, p. 6; Anonymous, *De l'arme de la cavalerie en Suisse* (Geneva, J.-J. Paschoud, 1824), p. 2.

3 Guderian's adage can be loosely translated as "Don't spray, punch." Translations are mine unless otherwise noted.

4 *L'arme de la cavalerie*, pp. 13-15; in Berne, cavalry exercises were often performed on foot, to prevent injury to the horses – Emanuel von Rodt, *Geschichte des Bernerischen Kriegswesens*, 3 vols (Berne, Jenni, 1831 (vols. 1 and 2) / 1834 (vol. 3)), pp. 3:311-14.

5 *L'arme de la cavalerie*, pp. 4-6.

6 *L'arme de la cavalerie*, pp. 22-28, 39-40; the government's inspector in 1767 found Berne's *Dragoner* training "in all respects wholly inadequate": von Rodt, *Bernerisches Kriegswesen*,

Medieval cavalry is regularly understood as knightly cavalry; however, regularly only a small proportion were actually noble, most of the fighters were sergeants, i.e. commoners. Still, it was the feudal nobility who bore the responsibility for raising, equipping, and training both the riders and the horses in their entourage. Also, knightly cavalry adapted their armour, arms, tactics and sometimes their horses to the job they were given; for a light cavalry assignment like reconnaissance or escort, they might mount their courser instead of their destrier, and leave behind their full plate, closed helmet, and heavy lance in favour of a mail haubergeon, open helmet, and crossbow or light lance.[7]

While the functional distinction applies throughout the period of this chapter, the organisational separation, i.e. dedicated mounted units raised, equipped, trained, and used in combat as either heavy or light cavalry, developed gradually and can be applied with a modicum of reliability only from the eighteenth century. I here use "heavy" and "light" cavalry in this functional sense, not the organisational sense. In the Swiss nomenclature, *Dragoner* means light cavalry.

Practical Issues in Raising Cavalry

The minimum viable complement of heavy cavalry appears to be 500. Keeping 500 horses stabled, bedded, fed, watered – and mucked out – on a daily basis is already a logistical challenge.

Horse conformation varies widely, each requiring a different type of saddle, and a well-fitting saddle is essential to maintaining a horse in useful condition.[8] The saddle at the same time is the most sophisticated and expensive piece of equine kit. The modern cavalry solution was to task remount depots with supplying a standardised horse,[9] and mass-purchase a standardised saddle that fit most of these standardised horses (even if the saddle was not ideal for the rider – but riders are cheaper and more easily replaced than horses). For most of the historical period, the solution was to oblige the rider to supply the kit[10] – a policy

pp. 3:314-19.

7 Michael Prestwich, "*Miles in armis strenuus*: The Knight at War" in *Medieval Warfare 1000-1300*, John France (ed. – London/New York NY, Routledge, 2006), 185-204, at pp. 185-89 (= *Transactions of the Royal Historical Society* 6 (1995), 201-220, at pp. 201-05) ; Hans Delbrück, *Das Mittelalter: Von Karl dem Großen zum späten Mittelalter* (1907, reprint Hamburg, Nikol, 2000), pp. 355-62.

8 Rilliet de Constant, *Cavalerie Suisse*, p. 55.

9 Advocated for the new Swiss cavalry by Rilliet de Constant, *Cavalerie Suisse*, pp. *16-19*.

10 Von Rodt, *Bernerisches Kriegswesen*, pp. 3:252-55.

that limited the available recruits to individuals who could afford it.

One reason sometimes given for the lack of a Swiss cavalry is that the terrain is supposedly not conducive to raising horses.[11] This is quite simply wrong, as is also borne out by the record. The *cavalli della Madonna*, bred at the monastery of Einsiedeln from about the eleventh century, were highly regarded into Northern Italy.[12] In early modern times, Switzerland regularly exported horses to surrounding princes.[13] In the late nineteenth and twentieth centuries, the Swiss Army supplied its cavalry with *Freiberger* or *franche-montagne* horses, an indigenous breed of medium-blood all-round workhorses named after the "free mountains" region of the Jura, where herds roamed (and still roam) freely.[14]

Training of a modern cavalry horse would start at age 4½. The horse would arrive completely untrained and be in a specialised training setting for half a year, then integrated into the unit for a year of on-the-job training in the formation evolutions essential to modern cavalry battlefield tactics. Only then would the horse be considered fully trained. The typical service life for a military horse is to about age fifteen;[15] it could still be ridden for many more years, but would not be up to the rigours of campaign. Conversely, illness and injuries were liable to cut short service life. Assuming an effective service life of seven years, the remount service for a unit of 500 horses would have to graduate 70 to 75 trained horses each year.[16]

Habituating a horse to saddle and rider and to the rider's aids is a time-consuming and sensitive affair. Inexpert handling can delay the horse's education or

11 See e.g. references with Jürg Stüssi, *Das Schweizer Militärwesen des 17. Jahrhunderts in ausländischer Sicht*, Diss. Zurich 1982 (Zurich, ADAG, 1982), p. 63.

12 Thomas Frei, "Einsiedeln als Pferdezentrum der Innerschweiz," *Schwyzer Hefte* 103 (2015), 15-26, at p. 21.

13 A Berne mandate from 1586 (*Die Rechtsquellen des Kantons Bern; Erster Teil: Stadtrechte; Elfter Band: Das Stadtrecht von Bern XI; Wehrwesen*, Hermann Rennefahrt (ed. – Aarau, Sauerländer, 1975), no. 157, pp. 295-96) restricted the export of horses to nearby Burgundy and France in view of the brewing crisis.

14 *Freiberger* still form the mainstay of the modern Swiss Army's *train*.

15 Friedrich von Krane, *Anleitung zur Ausbildung der Cavallerie-Remonten* (Berlin, Mittler, 1870), pp. 250, 676, 679, 685. For a discussion on size, conformation, etc. see Jürg Gassmann, "Combat Training for Horse and Rider in the Early Middle Ages," *Acta Periodica Duellatorum* 6.1 (2018), 63-98, at pp. 65-73. Berne did not have an explicit guidance on horse height – von Rodt, *Bernerisches Kriegswesen*, pp. 3:253-54.

16 Gassmann, "Combat Training," p. 73; Rilliet de Constant, *Cavalerie Suisse*, p. 17, estimates a service life of eight years not ten, which would correspondingly increase the load on the remount service.

ruin it completely. Six months is already a very short time to bring a horse from unbroken to trained to move in formation, so the training has to be efficient, focused, and expert.[17]

I have here used data from modern cavalry organisation and training, for two reasons: Firstly, for most of the historical period, we simply lack the data, and where we have data, it cannot be generalised. But secondly, and even though we lack the data, the realities of handling horses still applied. At no time in history was it possible to take random 500 individuals, random 500 horses, and random 500 saddles, and assemble a functioning cavalry regiment. The organisation, training, logistics, and infrastructure required to produce viable battlefield cavalry need to be borne in mind at all times.[18]

Political and Military Constitution of the Swiss Confederacy

The Old Swiss Confederacy is a complicated structure, and there is room here for only a rough sketch; it coalesced slowly from 1291 (or 1307) from an odd amalgam of cities and incorporated valleys. By 1513, the Confederacy numbered thirteen cantons (*Orte*) as full members,[19] and no more full members were admitted until Switzerland's forcible reorganisation by Napoleon. Each canton considered itself "sovereign" within the Holy Roman Empire (HRE). There was no single unifying treaty, and the sole common institution was the *Tagsatzung*, a congress of ambassadors from the cantons.[20]

17 E.g. von Krane, at that time colonel of the Prussian cavalry and commanding a cavalry corps during the 1870-71 war, warns against allocating the remount training as a last-in-the-pecking-order job; it should be given to the most qualified officer, supported by the best riders among the senior NCOs and troopers, and prioritised over mundane tasks: von Krane, *Cavallerie-Remonten*; pp. 659-69; Rilliet de Constant, *Cavalerie Suisse*, pp. 25-33; *L'arme de la cavalerie*, pp. 25-28.

18 As anyone who has done it can readily attest, if assembling, accommodating, feeding, and watering a hundred people is already a daunting exercise, doing the same for even ten horses and their riders is by order of magnitude more so.

19 Initially Uri, Schwyz, and Unterwalden, and then in order of accession Lucerne, Zurich, Glarus, Zug, Berne, Fribourg, Solothurn, Schaffhausen, Basle, and Appenzell. For the development of Swiss constitutional arrangements from founding to 1799 and the Confederacy's relationship with the HRE, see the short tract by Hans Conrad Peyer, *Verfassungsgeschichte der alten Schweiz*, Zurich, Schulthess, 1980.

20 Thomas Maissen, *Geschichte der Schweiz*, Baden, hier+jetzt, 2010, pp. 22–9; Peyer, *Verfassungsgeschichte*, pp. 21–36; Jürg Gassmann, "A Well Regulated Militia: Political and Military Organisation in Pre-Napoleonic Switzerland (1550-1799)," *Acta Periodica Duellatorum* 4.1 (2016), 23-52, at pp. 24–5.

The Confederacy additionally included associate members, allied with one or more of the Thirteen;[21] they participated in the *Tagsatzung* meetings, but did not have a vote. Lastly, there were the subject territories, administered by one or more of the full members, who shared in their lucrative exploitation.[22]

Up to the Reformation, the Confederates had sought to maintain a balance between city cantons and rural, *Landsgemeinde* cantons. The Reformation 1517 brought a further major split. Zurich had its own reformer Huldrych Zwingli and became Protestant in 1525. Shaken by a religious scandal, Berne followed in 1528, along with Basle City, Schaffhausen, and half of Appenzell; Glarus was mixed. Geneva, with its own reformer John Calvin, was at the time only an associate member. The subject territories generally followed their controlling cantons, in accordance with the principle *cuius regio, eius religio*.[23]

During the sixteenth and seventeenth centuries, the cantons turned inward, focussing on implementing absolutist regimes in their territories. The *Tagsatzung* continued to meet and function, but unified action was difficult.[24]

All the Swiss cantons were republican, governed by councils made up of guild masters, the local petty nobility, the *grande bourgeoisie*, or the patriciate; the rural cantons elected their executive in *Landsgemeinde* assemblies.[25] For their armed forces, they all relied on a militia composed of the free men between the ages of around 16 and 60; their service obligation was initially rooted in the feudal *ius armorum et sequelae*, and so hedged with feudal law restrictions on the freedom of action of the authorities. Progressively, however, the authorities transformed it into the obligation of an absolutistic subject, regulated by top-down mandates.[26] The transformation did meet with resistance, but the authorities pursued it circumspectly and with determination.

The focus of the cantons' efforts was on the infantry. All free men were

21 Maissen, *Geschichte,* pp. 16–55; Peyer, *Verfassungsgeschichte*, pp. 36–9. Prior to 1500, the main associates were the Grisons (itself a complicated confederacy including the Prince-Bishop of Chur), Valais (a confederacy of rural estates), and the Prince-Abbey of St Gall, occupying the north-western half of the modern canton.

22 Peyer, *Verfassungsgeschichte*, pp. 60-61.

23 Peyer, *Verfassungsgeschichte*, pp. 84-92; Maissen, *Geschichte*, pp. 82-88.

24 Peyer, *Verfassungsgeschichte*, pp. 61, 104-05.

25 Peyer, *Verfassungsgeschichte*, pp. 48-55.

26 Stüssi, *Militärwesen*, pp. 110-11; Gassmann, "Militia," pp. 26-30 and 35-42; E. A. Geßler, "Basler Wehr- und Waffenwesen im 16. Jahrhundert," *Neujahrsblatt der Gesellschaft zur Beförderung des Guten und Gemeinnützigen* 116 (1938), p. 8; Peyer, *Verfassungsgeschichte*, pp. 64-68.

obliged to hold a certain complement of aggressive and defensive arms, recorded in periodically updated muster rolls (*Mannschaftsrödel*) and regularly inspected (*Harnischschau*).[27] The quality of arms and training differed widely between the cantons, but the Swiss mercenary business meant that the Swiss benefited from veteran officers and other ranks returning from foreign service, where they had experienced intensive training and even seen combat.[28]

Cavalry Engagements in Swiss Battles: Old Zurich War to Marignano

The cantons' initial motivation for allying themselves should be seen as a coldly calculated exercise in economy of enemies, allowing each canton to focus on its key objectives. Occasionally, these objectives clashed; in 1440, Zurich was hoping to secure a vital stepping-stone on the road to the Grisons passes, as an alternative to the Gotthard pass, which was controlled by Confederates Uri, Schwyz, and Unterwalden. Schwyz schemed to deny Zurich the prize, so Zurich attacked Schwyz, leading to the Old Zurich War. Since Zurich had attacked a Confederate, all Confederates were obliged to side with Schwyz. Zurich in turn sought help from an old antagonist of the Confederacy, Habsburg, which still harboured ambitions to regain a foothold in its ancestral lands.[29]

Upon commencement of hostilities, the Habsburg Holy Roman Emperor Frederick III sent Zurich a complement of 500 knights under the Swabian knight and military entrepreneur Hans von Rechberg, under the overall command of Thüring von Hallwil. At the battle at St. Jakob an der Sihl on 22nd July 1443, Rechberg advised the Zurich infantry to withdraw to the city, with the cavalry covering the retreat, but the Zurich troops preferred to stand. Rechberg rode out to harry the attackers, instructing the infantry commander to secure the cavalry's fall-back position, where he might be able to rally and disrupt the Confederates' advance. However, the Zurich infantry, by now drunk and unruly, failed to do so, leaving it to be occupied by the Confederates. Trapped in the open, many of the knights had to abandon their horses and seek safety with the infantry; retreat turned into rout, and Zurich barely managed to hold the city gate. Rudolf Stüssi, Zurich's powerful burgomaster, was killed.

27 Regula Schmid, "The armour of the common soldier in the late middle ages: Harnischrödel as sources for the history of urban martial culture," *Acta Periodica Duellatorum* 5.1 (2017), pp. 7-24; Gassmann, "Militia," pp. 26-27.

28 Gassmann, "Militia," pp. 28-30.

29 Maissen, *Geschichte*, pp. 51-53.

Stüssi's death and Habsburg's moves to exercise more control after this careless waste of the valuable cavalry led to a reconsideration among the Zurich elite; Zurich's new leadership terminated the alliance with Habsburg, and sought an armistice with the Confederates.[30]

The next examples are from the Burgundian War against Charles the Bold. In preparation for the war, the French King Louis XI had brokered an unlikely alliance between the Swiss and Emperor Frederick III, and Habsburg provided the Swiss with a small complement of cavalry. The battle of Grandson on 2nd March 1476 developed out of a chance encounter between the respective vanguards. The Swiss were able to take advantage of the Burgundians' confusion in deployment and routed the Burgundian forces, capturing Charles' entire baggage and siege trains. But the Swiss had insufficient cavalry to mount a pursuit, leaving the Burgundian forces essentially intact, only to return two months later after resupplying in Lausanne.[31]

The background to the next and decisive battle was Charles' siege of Murten or Morat, recently captured by Berne and now ably defended by the Bernese knight Adrian von Bubenberg; the battle on 22nd June 1476 resulted from Swiss efforts to relieve the town. Habsburg increased its support, supplying a string of experienced senior officers, including the commander in chief, the Württemberg knight Wilhelm Herter von Hertneck, as well as roughly 1,100 Lorraine knights under Count Oswald von Thierstein.[32] The cavalry, supplemented by a few Bernese and allied knights, flanked the field fortification guarding the camp and cleared it of its Burgundian defenders. This opened the way for the Swiss to surprise and annihilate the inexplicably unprepared Burgundians. A sally by the Morat garrison into the Burgundians' rear compounded the disaster.[33]

The final example is Marignano; in the early stages of Francis I's Italian campaign, which put an end to the Swiss' protectorate over Milan, a daring French raid led by the Chevalier de Bayard on 12th August 1515 surprised and captured the 500-strong Milanese cavalry under Prospero Colonna at Villafran-

30 Johann von Klingenberg, *Klingenberger Chronik*, Anton Henne (ed. – Gotha, F.A. Perthes, 1861), pp. 313, 316–9; despite being an exceptionally brutal war, the final peace settlement brokered by Berne broadly saw a return to the *status quo ante* and Zurich resuming it place in the Confederacy – Maissen, *Geschichte*, pp. 52-53.

31 Albert Sennhauser, *Hauptmann und Führung im Schweizerkrieg des Mittelalters* (Zurich, Fretz und Wasmuth, 1965), pp. 113–14; Stüssi, *Militärwesen*, p. 63; Maissen, *Geschichte*, pp. 59-60; Delbrück, *Mittelalter*, pp. 710–15.

32 Von Rodt, *Bernerisches Kriegswesen*, p. 1:40.

33 Delbrück, *Mittelalter*, pp. 697–99, 719–29; Maissen, *Geschichte*, pp. 59-60.

Fig. 1 – Battle of Grandson, Habsburg Knights at the Centre
Diebold Schilling, *Eidgenössische Chronik* S 23 fol., pp. 200-201
Lucerne, Korporation Luzern, CC BY-NC

ca.[34] Without cavalry of their own, the Swiss at the battle of Marignano on 12-13th September had no cavalry to tackle Francis' devastating field artillery, nor to disrupt the threatened Venetian cavalry flanking attack on the second day of the battle, which eventually persuaded the Swiss to withdraw.[35]

Swiss Cavalry during the Late Middle and Early Modern Ages

Between the thirteenth and the fifteenth century, rural and city-resident petty nobility was still common in Switzerland, both autonomous as well as acting as mediators of rule for the cities and the bishoprics or large abbeys. Berne pursued a deliberate policy of securing alliances (*Burgrechte*) with the regional petty no-

34 Von Rodt, *Bernerisches Kriegswesen*, p. 1:220.

35 Sennhauser, *Hauptmann und Führung*, pp. 120–1; Maissen, *Geschichte*, p. 72.

bility,[36] referred to as *Twingherren*, and inherited another complement of knights when it acquired the Habsburg Aargau in 1415.[37] As the cantons, both city and rural, consolidated their power and bureaucratised the administration of their fiefs, now increasingly seen as territories, autonomous knights lost their traditional roles and sources of income. Furthermore, the Old Zurich War brought indiscriminate devastation of the countryside, compelling formerly autonomous rural knights to seek mediatisation for protection. By the second half of the fifteenth century, the autonomous petty nobility had died out or was mediatised and absorbed into the governing patriciates and guild councils.

Mounted individuals are occasionally mentioned in Swiss sources, usually from among this elite, as one would expect for knightly cavalry. In Zurich, one must assume that the *Constaffel*, the association of city-resident knights who shared power with the guilds, fought as knights, as did the Basle *Hohe Stube*.[38] But detailed records are scarce, unlike for the infantry; an organised assembly of mounted fighters constituting battlefield cavalry is not evident.

Mounted individuals were also needed for light cavalry roles, e.g. for reconnaissance or to protect logistics. The Bernese *Twingherrenstreit* of 1469–71 incidentally illustrates the point. The dispute arose because the knights (among them Adrian von Bubenberg, one of the heroes of the Battle of Morat five years later) insisted on their privileges, which Berne's leading *Burger*, themselves commoners and thus superseded in protocol by their own vassals, found intolerable. In the ensuing stand-off, the common-born privy councillors argued that it had been the commoner infantry who had won Berne's signal victories in the field, to which the knights replied that their protection of the logistics and lines of communication had made those successes possible at all.[39]

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36 See e.g. an example from 1488 in Berne: *Die Rechtsquellen des Kantons Bern; Erster Teil: Stadtrechte; Vierter Band, erste Hälfte: Das Stadtrecht von Bern IV*, Hermann Rennefahrt (ed. – Aarau, Sauerländer, 1955), no. 182 c), p. 620. Von Rodt, *Bernerisches Kriegswesen*, pp. 1:36-40.

37 These alliances were usually lopsided in favour of Berne, but also protected the nobility from being absorbed by powerful dynasts: von Rodt, *Bernerisches Kriegswesen*, pp. 1:9–11.

38 For Basle Geßler, "Basler Wehrwesen" p. 8 – the *Auszugs-* or *Reisrodel* from the sixteenth century show infantry and in some actions artillery, but no cavalry (*ibid*., pp. 37-46); the evidence for the Zurich *Constaffel* is ambiguous, suggesting that the obligation to serve mounted may have been a function of census or nobility, not of association with the *Constaffel* - Martin Illi, *Die Constaffel* (Zurich, Verlag NZZ, 2003), pp. 23-24. Also *L'arme de la cavalerie*, pp. 36-38.

39 Von Rodt, *Bernerisches Kriegswesen*, pp. 1:39–40, 200; Sennhauser, *Hauptmann und Führung*, pp. 31-32.

Fig. 2 – The *Twingherr* Petermann von Wabern
Diebold Schilling, *Amtliche Berner Chronik*, Vol. 3, p. 490
Berne, Burgerbibliothek, Mss.h.h.I.3, CC BY-NC

A Confederate Solution – The Defensionale *of Wil and its Successors*

While the cantons do not seem to have been too concerned about their lack of cavalry in the sixteenth century, the seventeenth century – and especially the outbreak of the 1618-1648 Thirty Years' War – focussed the Swiss' attention.[40]

Pretty much every neighbour of the Confederacy was actively engaged in the war, and belligerents took shortcuts from one theatre to the other through Swiss territory. The most serious confrontation was in the Grisons; the Grisons-controlled Veltlin (Valtellina) was the only overland link between Habsburg's Imperial armies in Germany, with their insatiable demands for pay, and the supply of South American gold via Habsburg Spain and Lombardy.[41]

The *Tagsatzung* protocols deplore these violations of Swiss neutrality and show the Swiss' frustration about their inability to deter incursions. An expert whitepaper commissioned by the *Tagsatzung* and deliberated in April 1629 argued that a force of at least 1,500 horse was required for effective protection. An initial step should envisage contracting for 400 cuirassiers and 200 mounted arquebusiers in Germany, but before that was implemented, the cantonal governments should identify suitable cavalry commandants and determine how many troopers could be raised locally.[42] Due to "*allerlei Bedenken*" (a variety of concerns), the idea of a joint Swiss purchase was abandoned at the meeting in May that year, and instead the cantons advised to hold ready such mounted contingents as they had available – probably knowing full well that few if any such contingents existed.[43] A February 1635 *Tagsatzung* advised the cantons to check with innkeepers, millers, butchers, reeves and villages about suitable horses and equipment.[44]

It is not too hard to discern the *Tagsatzung*'s *Bedenken* – mercenaries, especially cavalry, were expensive, all the more so at the time.[45] Moreover, even if

40 Peyer, *Verfassungsgeschichte*, pp. 93-96.

41 Stüssi, *Militärwesen*, pp. 103-05.

42 *Die Eidgenössischen Abschiede aus dem Zeitraume zwischen 1618 und 1648*, Vol. 5 Part 2 (2 vols.), J. Vogel / D. A. Fechter (eds. – Basle, Schulze, 1875), pp. 576-577; details pp. 2,236-2,239. Zurich seems to have implemented the preparatory step, as in January 1630 the colonel they had appointed asked whether he was still needed, and if so whether the promised budget for two squadron commanders could please be allocated – *Eidgenössische Abschiede* 5.2, p. 615.

43 *Eidgenössische Abschiede* 5.2, p. 615.

44 *Eidgenössische Abschiede* 5.2, p. 919. On the military role of innkeepers and butchers Sennhauser, *Hauptmann und Führung*, pp. 142-45.

45 A memorandum agreed in August 1626 between Berne and Zurich called for the creation of

the cost and the cost-sharing were agreed, where would they be cantoned once hired, and who would bear those costs? A facility would have to be able to accommodate at least 500; spreading them out among the Confederates would defeat the purpose of having an effective rapid reaction force.[46] If the costs were to be shared, would the contributors accept the responsibility and pay in time? Even worse, these would be standing troops, a feature alien to the cantons' military constitutions.[47] Would the mercenaries obey the *Tagsatzung*, or would they constitute a fifth column for their polity of origin,[48] or could the host canton instrumentalise them for their own gain – or could they even, as numerous Italian *condottieri* had done, go rogue and seek to capture one of the cantons?

A *Defensionale* was finally agreed at a January 1647 marathon council of war held in Wil,[49] under the impression of the Swedish army under Wrangel capturing Bregenz, just across the Rhine. It required each canton and territory immediately to send 50 foot to the Thurgau, to dissuade Wrangel from attempting to cross the Rhine. Should the situation escalate, 12,000 infantry and 50 guns could be called up, and additionally twice that number held in reserve. Each canton, participating associate member, and subject territory's contribution obligation was stated in numbers of infantry and artillery, and an additional obligation to supply three troopers for every 100 infantry.

It is questionable how realistic this last provision was, even for this very low number; for the infantry and artillery, the text details the unit structure, senior officers and staffs, armaments, ammunition, supplies, transports, auxiliary engineers, mustering places, etc. The injunction on troopers is a brief sentence toward the end of the document, without any details, coupled with a somewhat desperate appeal to Zurich and Berne to please consider sending additional cav-

a standing joint force of 9,000 foot and 600 horse; but since new taxes would have to be raised to defray the costs, which was politically difficult given the rise in the cost of living, the proposal was shelved – *Eidgenössische Abschiede* 5.2, pp. 470-71. In the discussions about a *Defensionale*, a *Tagsatzung* protocol from May 1639 reflects broad agreement and impatience about implementing such a framework for a joint Swiss force, but for reasons of cost this should include only infantry, no cavalry – *Eidgenössische Abschiede* 5.2, p. 1132.

46 Berne and Zurich in January 1634 debated whether they should ask the Duke of Württemberg to garrison a joint mercenary cavalry regiment, to be raised in Germany – *Eidgenössische Abschiede* 5.2, p. 812.

47 Stüssi, *Militärwesen*, pp. 129-31.

48 The political meddling of the Habsburg knights sent to "help" Zurich in the Old Zurich War (fn 29-30 above) had not been forgotten.

49 Gassmann, "Militia," p. 31.

alry.[50] In any event, the *Defensionale* of Wil was never activated, but it served as precedent and template for later assistance among the Confederates.

The *Defensionale* of 1668, in reaction to the French occupation of the hitherto Spanish Habsburg Franche-Comté of Burgundy, drew largely on the *Defensionale* of Wil, with numerous additions and amendments.[51] As in 1647, the cavalry obligation was first set at three per hundred infantry, but in 1674 amended to three heavy cavalry plus three *Dragoner*.[52] Again, it does not further elaborate on the mounted element. The *Defensionale* of 1668, like the one of 1647, is in its origins a reaction to a specific threat, but its amendments and supplementary regulations show that it was also an embryonic effort at a Confederate military constitution. At the same time, the later addenda to the *Defensionale* already manifest objections from the Catholic cantons.

Failure of the Defensionale *Effort*

The issue festered without resolution. The War of the Spanish Succession prompted another effort at a redaction of the *Defensionale*; on the outbreak of the war in late 1702, the belligerents were facing each other around Basle. A Swiss council of war sat between early October and mid-November.[53] Some Confederate infantry contingents were called up and sent – Basle, Zurich and the Protestant cantons referred to the principles of the *Defensionale* of Wil and urged a new compact, but this time, not even formalistic unity was achieved. Schwyz for instance formally rejected the *Defensionale*, and argued it was sending troops on the basis of its obligation of succour under the terms of the Con-

50 *Eidgenössische Abschiede* 5.2, pp. 2,255-2,260. Maissen wrote a detailed analysis of the implementation of the *Defensionale* of 1668 in the Grisons, where the allocations of responsibilities for providing the infantry, the officers, etc. among the various Grisons polities were negotiated and precisely regulated; cavalry is not mentioned. It does not seem to have been expected, either; there was correspondence with the *Tagsatzung* about whether the infantry allocation was fair, but again nothing about the cavalry – Felix Maissen, "Das eidgenössische Defensionale und die Drei Bünde 1668," *Bündner Monatsblatt* 1-2 (1961), pp. 4-18.

51 Peyer, *Verfassungsgeschichte*, pp. 96-97.

52 *Die Eidgenössischen Abschiede aus dem Zeitraume zwischen 1649 und 1680*, Vol. 6 Part 1 (2 vols.), J. A. Pupikofer / J. Kaiser (eds. – Frauenfeld, Huber, 1867), pp. 1,675-1698; three troopers: on p. 1,678, paragraph 15; additional three dragoons: on p. 1,690. A Berne missive to its *Venner* Sigismund von Erlach of 30th March 1668 instructed him to make available *eine schöne anzahl* (a goodly number) in response to the requirements of the *Defensionale* and to take the dispositions he saw fit (*Rechtsquellen Bern XI*, no. 74, p. 122).

53 *Die Eidgenössischen Abschiede aus dem Zeitraume zwischen 1681 und 1712*, Vol. 6 Part 2 (2 vols.), M. Kothing / J. B. Kälin (eds. – Einsiedeln, Wyß Eberle, 1882), pp. 1,031-1,034.

federation treaties.[54] No further attempt was made to agree a centralised military organisation until the Federal Constitution of 1848.

The seventeenth century also manifested a growing chasm between the military capabilities of Zurich and Berne (the two main Protestant cantons and also the most populous members of the Confederacy) and the smaller and rural cantons, among these all the Catholic cantons. Berne and Zurich adopted firearms for their infantry, while the smaller cantons mostly still relied on the traditional pikes and halberds. In the First Villmergen War in 1656, the carelessness of Berne and Zurich led to a Catholic victory, but the writing was on the wall.[55]

Both Berne and Zurich continued to modernise their military organisation and their armaments, and that included efforts to create a modern, militia element of regular cavalry. In this, the Catholic cantons clearly lagged – a secret 1695 conference in great detail reviewed the Catholic military capabilities and the preparations for the anticipated next war against the Protestants (the eventual Second Villmergen War, 1712). The conference urged the cantons to come up with at least some *Dragoner*, but acknowledged that they did not have much to offer in terms of cavalry.[56]

I shall here review in more detail the development in Berne. Berne was in several respects untypical for the Confederates in general, but it did manage, to a greater extent than its co-confederates, to raise a credible cavalry. How it got there, and the pitfalls on the way, is instructive.[57]

Berne, the Quartier *System, and Cantonal Cavalry*

At the beginning of the sixteenth century, Berne was already the largest member of the Confederacy, covering more or less the modern canton as well as the western half of the modern canton of Aargau. In 1536, Berne on its own (without Confederate participation) conquered a swathe of the Duchy of Savoy,

54 *Eidgenössische Abschiede* 6.2, p. 1,035; Peyer, *Verfassungsgeschichte*, pp. 97-104.

55 Von Rodt, *Bernerisches Kriegswesen*, pp. 3:212-18; Gassmann, "Militia," pp. 31-33; Peyer, *Verfassungsgeschichte*, p. 128.

56 *Eidgenössische Abschiede* 6.2, pp. 592-598; reference to *Dragoner* on p. 594. The proposition is not that the Catholic cantons somehow failed in cavalry because they were Catholic; Berne and Zurich succeeded because they were the largest and possibly because they were the best organised. Other, smaller Protestant cantons did no better than the Catholic ones.

57 I am here relying on von Rodt; throughout the roughly 500 years under review, Berne tinkered constantly with its military organisation, so the following paragraphs should be understood as an effort to distil the broad-brush trends only.

comprising the modern canton of Vaud and substantial territories south of Lake Geneva as well.[58] So while Confederate diplomacy assured that there were no external threats to the Confederacy, Berne faced the constant prospect of Savoyard retribution.

This did indeed materialise in 1589, and while Berne mobilised a large army, it had to settle for the loss of the territories south of Lake Geneva (the Vaud remained with Berne). The Bernese ruling patriciate was thorough in its *post mortem*; change was needed.

The military constitution still rested on feudal foundations; for the infantry, this meant that call-ups obliged the various estates to provide a number of fighters, but the authorities had no control over who was sent. The debacle of 1589, it was found, was due to the raised troops consisting of staid farmers and burghers who definitely did not want to be there.[59] Also, the units were assembled by and under their feudal banners, and they argued about their feudal-era prerogatives of precedence; constituting regiments in accordance with the principles of modern warfare, as was practiced in the principalities surrounding Switzerland and as the Swiss officers with foreign service experience were familiar with, was not possible.

Berne in 1592 at first attempted a radical reform, converting the free citizen's infantry service obligation into an annual tax, and using the revenue to raise a professional military. This proposal received a dusty answer from the populace, so the patricians moved more cautiously. The feudally-based service obligation was retained but tiered, allowing the authorities to designate a select levy of young, unmarried men, who would be mobilised preferentially. Also, call-ups were now arranged around geographically designated districts (*Quartiere*),[60] each with its own new regimental colours. The feudal estates comprised in this district were (reluctantly) permitted to bring their accustomed banners as well. After a generation, the old banners had vanished, and the "new" colours stood for modern regiments.[61]

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58 Von Rodt, *Bernerisches Kriegswesen*, pp. 2:39-40.

59 Berne had also hired 400 mercenary cavalry, but terminated the contract at the first inklings of a peace settlement with Savoy due to the costs. When the settlement fell through, Berne was not able to re-hire the cavalry in time to stave off its defeat – von Rodt, *Bernerisches Kriegswesen*, pp. 2:56-57.

60 The *Quartier* system was an innovation pioneered by Maurice of Orange in the Spanish-Dutch War, first adopted by Zurich – Gassmann, "Militia," p. 28; Peyer, *Verassungsgeschichte*, pp. 94-95, 128-29.

61 A 1595 call-up instruction in Berne's German-speaking districts is typical (*Rechtsquellen*

True to the feudal foundations of service, mustering cavalry followed a different route altogether. The military organisation of the cavalry in the Vaud under Savoyard rule had been along traditional feudal lines, relying on the local nobility. Berne did not change that; each Vaudois baron was obliged to muster with a defined number of lances, with five mounted fighters to each lance. However, the period of service as well was defined in accordance with feudal precedent, differing from baron to baron. In the war of 1589, Berne found that many barons had sold fiefs, mostly to Berne, and had so reduced their cavalry obligation; also, the duration of the war exceeded their feudal law-defined commitment, and so the mounted troops melted away as the campaign progressed.[62]

The Bernese authorities sought alternatives; instructions to the officials charged with infantry recruitment at the local level from the early seventeenth century enjoined the raising of a certain number of heavy and light cavalry troopers as well, but von Rodt doubts these instructions were effective, since the contemporaneous records from the *Tagsatzung* make no mention of such units.[63] Another deficit noted by the Bernese patricians was that they had in their midst no senior officers with active cavalry experience gained in foreign service who could evaluate hired mercenaries or lead the cavalry element, unlike for the infantry; during the Thirty Years' War, a deliberate policy was instituted to place individuals in Swedish cavalry service.[64] Still, until at least the middle of the seventeenth century, the Vaudois barons remained Berne's only reliable reservoir of cavalry, unsatisfactory as that was.[65]

Bern XI, No. 40, pp. 63-65); in para 5 *in fine*/p. 64 a plea to leave the traditional banners behind; and in para 7/pp. 64-65, they are asked *bey den unseren zu^{o} statt und land zu^{o} umbfragen, wer lustig were, unß umb gebürliche besoldung zu^{o} pferd ze dienen, also dz er mit voller rüstunge von kneüw auf biß über den kopf uff, darnach mit einem gu^{o}ten seytenwehr und einer feüwrbüchsen an sattelbogen bewehret seye* [to enquire with our [people] in town and country who would be keen to serve us mounted for appropriate pay, so that he may be equipped with full armour from knee to head, also with a good sidearm and a firearm at the saddle arch].

62 Von Rodt, *Bernerisches Kriegswesen*, pp. 2:39-46.

63 See above, fn 43-45.

64 Von Rodt, *Bernerisches Kriegswesen*, pp. 2:105-06; conscious of the advanced military know-how transfer Berne wanted, the Swedes sought to obtain a *quid pro quo* in terms of infantry mercenary hiring. Senior officers' lack of understanding for the cavalry are reiterated in 1851 by Rilliet de Constant, *Cavalerie Suisse*, p. 7.

65 Von Rodt, *Bernerisches Kriegswesen*, pp. 3:69-73; Stüssi, *Militärwesen*, p. 63; See e.g. *Rechtsquellen Bern XI*, no. 60 of 4th September 1634, p. 105; all governors were instructed to ready their effectives for mobilisation, and to institute mounted patrols; regarding the cavalry it was instructed: *Alle uns mit kriegsdienst und reißpflicht zu^{o} pferd zu^{o} gethane vassallen und lechenlüt des Welschlands sollen sich mit werschaften pferden und notwendiger kriegsbere-*

Fig. 3 – Vaudois Cuirassiers 1741
Colourised heliotype by Albert von Escher, c.1900
Courtesy Swiss National Museum, inv. LM-64847.1

With the Peace of Westphalia 1648, external threats diminished. Neither the suppression of the Peasants' Revolt in 1653 nor the First Villmergen War 1656 saw much need for cavalry. By the end of the seventeenth century, the Vaudois vassal cavalry was increasingly depleted by the decay of feudal institutions and by more and more of the barons transitioning into feudal service-exempt Ber-

itschaft versechen [All our vassals and liege men in the French-speaking lands [= the Vaud] obliged to perform war service and campaign duty mounted shall equip themselves with strong horses and necessary preparation].

nese military or public administrative functions.[66]

In Berne's German-speaking lands, feudal and census-based obligations to muster as heavy cavalry troopers remained,[67] but the government's cavalry administrators complained that the cost to the individual of maintaining the heavy cavalry equipment – a steel cuirass and further armour, including barding – meant that the equipment produced at the periodic manoeuvres was often sub-standard. The men with a high enough census to qualify were typically advanced in age, disinterested in serving, and unfit, nor were their mounts up to the job.[68] A further element of the cavalry was a corps of volunteers, but the administration had even less control over their effectives or equipment.[69]

The officials argued for a shift in emphasis to militia *Dragoner*, where they could rely on younger, hardier, and more adventurous recruits, and where the horses were both capable of taking the lighter loads and of accomplishing the less specialised tasks of the light cavalry. The officers commanding the cavalry reported improvements in the service's effectiveness during manoeuvres, and so Berne progressively reduced the number of heavy cavalry.[70] After 1701, only a complement of about fifty cuirassiers remained, raised from the capital's patriciate – von Rodt wryly notes that there is no record of these having assembled after 1655.[71]

A further military reform in the mid-eighteenth century did away with all mounted units except the militia *Dragoner,* organised in four regiments raised in the same districts as the infantry and kitted out with standardised equipment from Berne's efficient arsenal system. The numbers were still small – von Rodt calculates that the Bernese army, fully mobilised, in 1786 numbered around 78,000, of which the *Dragoner* comprised only about 1,000.[72]

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66 Von Rodt, *Bernerisches Kriegswesen*, pp. 3:69-72 – of the 207 effectives in the feudal *livre noir* in 1627, by 1786 only 122 were left.

67 However, the authorities had no luck in enforcing them – von Rodt, *Bernerisches Kriegswesen*, pp. 3:69.

68 Von Rodt, *Bernerisches Kriegswesen*, pp. 3:74; regarding arms and armour *ibid*., pp. 3:252-62.

69 Initially raised in the mid-seventeenth century and at that point a welcome and strong addition to the mounted troops, but progressively less reliable – von Rodt, *Bernerisches Kriegswesen*, pp. 3:65-68, 74.

70 Von Rodt, *Bernerisches Kriegswesen*, pp. 3:74-81.

71 Von Rodt, *Bernerisches Kriegswesen*, pp. 3:62-63, 81-82.

72 Von Rodt, *Bernerisches Kriegswesen*, pp. 3:188-89; the total population of Berne was approximately 400,000.

A glance at the structure of Switzerland's militia cavalry after WW II illustrates the organisational challenges of the service: Recruits had to buy their own horse, from the Army's stud, the cost subsidised to 50% by the Army. To qualify for the cavalry, they had to satisfy the Army that they had both the means and the facilities to maintain the horse, and the Army inspected every prospective recruit's stable. After basic training, troopers and their horses were called up annually for refresher courses for the next ten years, an Army veterinary inspecting the horse when it reported for service. The trooper was obliged to join the local cavalry association and attend its events – essentially continuing education in horsemanship – in between services. This effectively limited the reservoir of troopers to families with livery yards or tillage-oriented farms, or the wealthy.[73]

Summary and Conclusion

An argument that appears again and again is the cost of the cavalry, but while it was certainly a factor, it does not seem persuasive that it was the decisive one.[74] The cantons, even the smaller ones, spent generously on maintaining their artillery. Had the will been there, some of the budget could surely have been diverted to maintaining at least light cavalry, as some cantons, and the Federal Army, eventually managed.

This brief overview shows that cavalry are a profoundly political service;[75] it was the Confederates' unwillingness to deal with the issue of the effective control of the cavalry rather than costs that prevented a joint effort even during such time of crisis as the Thirty Years' War. The Confederates managed to present a united front for the *Defensionale* of Wil 1647 (which did not deal with issues of command), for the Treaties of Westphalia the following year, and in the Peasants' Revolt of 1653. But already a few years later in 1656, the main Protestant and Catholic cantons clashed in the First Villmergen War; they did so again in the Second Villmergen War in 1712, and again in the largely unbloody *Sonderbundskrieg* of 1847. This led to the formation of Switzerland under a federal constitution the following year, and with it a federal military (though cavalry and infantry units continued to be raised on a cantonal basis).

In addition to these political hurdles, the organisational hurdles were for-

73 Brunner, *Kavallerie*, pp. 77-81. It also ensured that the cavalry was the most conservative and socially stratified of the services.

74 So also *L'arme de la cavalerie*, p. 39.

75 And remained so into the modern cavalry: Brunner, *Kavallerie*, e.g. p. 29.

Fig. 4 – Berne *Dragoner*, 1779
Courtesy of Swiss National Museum, inv. LM-91321.23

midable. Even the two largest, richest, and most powerful cantons, Berne and Zurich, both of them Protestant and with established institutions for military cooperation, could not implement the joint hiring of one regiment of cavalry; for its cantonment, they were obliged to look outside of Switzerland, with a neighbouring prince.

One reason lay in the exclusive reliance on militia. The cantons had instituted arsenals, but there were no barracks. Soldiers kept their uniform and weapons (and horse) at home, as they still do, and appeared at call-ups ready kitted out. Only once Berne and Zurich had introduced the *Quartier* organisation were they able to organise regular militia cavalry units.

These considerations point to a further factor; as Swiss observers themselves commented, a key Swiss deficit was the absence of high nobility, understood as an essential element in assuring heavy cavalry.[76] The Bernese experience in the Vaud certainly supports this hypothesis. For over a century, Berne drew on the princely feudal structures inherited from the Dukes of Savoy, but Berne's republican nature meant that these feudal structures could not be kept "alive," as the dukes would have done by awarding new fiefs or promoting successors for extinguished family lines.[77] Switzerland also lacked the magnificent stud complexes constructed in the surrounding geography, where princes did not shy to hire Leonardo da Vinci, and the master was not averse to putting his mind to the commissions. These were the impressive apex of an extensive system for supplying the princely household with top-quality, heavy cavalry-capable and trained mounts.[78]

Switzerland offers a counter to the proposition that changes in military technology force changes in society. It is very clear from the *Tagsatzung* protocols in the early phases of the Thirty Years' War that the cantons knew very well what it took to field a modern seventeenth century army, and that they simply lacked the cavalry. A century earlier, these same cantons had been on the same stage a force to be reckoned with, even a driving force.

76 Stüssi, *Militärwesen*, pp. 62-63.

77 Not specifically on this point, but generally on the late mediaeval Savoyard cavalry Roberto Biolzi, "De l'écuyer au prince: le cheval de guerre en Savoie à la fin du moyen âge," in *Le cheval dans la culture médiévale*, B. Andenmatten, A. Paravicini Bagliani, E. Pibiri (eds. – Florence, SISMEL, 2015), pp. 89-116.

78 See e.g. Sarah G. Duncan, "Stable Design and Horse Management at the Italian Renaissance Court," in *Animals and Courts*, Mark Hengerer and Nadir Weber (eds. – Berlin/Boston MA, de Gruyter Oldenbourg, 2020), pp. 129-52; Juan Aranda Doncel and José Martínez Millán (eds.), *Las cabellerizas reales y el mundo del caballo* (Cordoba, UAM/Córdoba Ecuestre, 2016).

Fig. 5 – Manoeuvre Camp of the Basle Free Company, 1791
Colourised etching, 1791
Courtesy Swiss National Museum, inv. LM-44771

Now, the focus of their ambitions regarding military effectiveness was to project credibly and in fact enforce their chosen policy of armed neutrality in order to demonstrate to the surrounding belligerents that Swiss territory was neither hostile nor a power vacuum they, for their own protection, needed to fill. For all the distrust and scheming between the Confederates, in this they were agreed, and this they willingly supported with blood and treasure, at least until unity began to fray in the eighteenth century.

Having effective cavalry to hand would have made the military solution simpler, but they were not minded to compromise their principles of governance to that end. If trouble was brewing, they rushed their hastily called-up infantry and artillery to contain the imminent threat – this they were well organised to do.[79]

79 Stüssi, *Militärwesen*, pp. 111-13.

As Stüssi shows, their diplomacy leveraged their geographic advantages – Switzerland's location was strategic, and an attack by one of its powerful neighbours would invariably have brought its other neighbours to offer support in defence.[80] They also deliberately projected and cultivated an image of military prowess and determination, freely allowing tourists to view their arsenals, their fortifications, and their troops' training events. The entirely desired conclusion by foreign observers was that even if conquering Switzerland was possible, holding the territory in the face of an armed and warlike populace was not.[81]

The ruling strata in all cantons were careful to maintain military control. This obviously applied against their citizens, whom they increasingly saw as subjects. Armed and militarily proficient though the common man was, the ruling strata ensured that the command and leadership expertise as well as the heavy weapons remained in the rulers' control. They also did not want to rely on a Praetorian Guard, too conscious of the historical precedent of Guard commanders replacing their commander in chief. Rather than invite in a powerful arm that they did not properly know how to use and therefore could not control, they preferred to do without.

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80 Conversely, of course, an open alliance with one of the neighbours would inevitably have invited a pre-emptive invasion from others.

81 Stüssi, *Militärwesen*, pp. 137-39.

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Croats, Hussars and Uhlans

The influence of the Eastern European military on the Western European military - A research outline

Alexander Querengasser

"Der Kleine Krieg was thus as much the staple of Early modern warfare in many parts of Europe as pitched battles and protracted sieges. By the side of spectacular confrontations and campaigns, any complete military history of the age must consider the countless „small wars" […]",[1] Geoffrey Parker once explained in his History of the Military Revolution. However, the lines of development that Parker then outlines only in broad strokes are limited to a depiction of the small war within Western European early modern military history. Jeremy Black was one of the first to recognize that this approach fell short, arguing based on the studies of Parker and Michael Roberts: „Rather than treating Eastern Europe, and more specifically Austria and Russia, as ´backward´ powers that adopted the early modern European ´Military Revolution´ discerned by Roberts and Parker only slowly, it is possibly more appropriate to think in terms of a multi-centred early modern European ´Military-Revolution´. In addition to the *trace italienne* and other changes in land warfare in western Europe on which Roberts and Parker focus, it would be possible to discuss […] also changes in land warfare in eastern Europe that owed much to the stimulus provided by conflict with the Turks and Tatars."[2]

However, Black also assumes an adaptation of the Western European military system to the military conditions of Eastern Europe, rather than an integration of Eastern European military traditions, for example, into the military system of the Habsburgs. Frank Tallett, on the other hand, believed that he could largely ignore Eastern Europe in his consideration of military-historical developments in the 16th and 17th centuries:

„I am not wholly convinced that developments in, say, Russia and Poland can be meaningfully discussed in the contexts of trends and changes which were, in

1 Quot. Parker, p. 41.

2 Quot.: Black, War and the World, S. 91.

many respects, particular to western and central Europe."[3]

In his anthology on early modern warfare in Eastern Europe published in 2012 Brian Davies wrote that the so-called Military Revolution of the West played no role in Eastern Europe for a long time due to geographical, social, demographic and infrastructural differences and that only tactics and techniques were gradually adapted.[4]

In the early modern period, i.e. from the end of the 16th to the middle of the 18th century, the east of Europe, Poland, Hungary and the Balkans, were separated from the rest of the continent by an invisible barrier, sometimes just as strongly as America or India by the vastness of the oceans. The cultural and religious differences, as well as the differences in the individual army constitutions and in the way of waging war, were considerable.

During the many long-lasting conflicts in Eastern Europe, Western European armies repeatedly encountered the use of irregular troops and the so-called Small War.[5] Very quickly, the powers involved in these wars, the Habsburg Empire, Sweden, but also the small Electorate of Saxony, began to use the abilities of local populations to wage this Small War for their own military. While this was initially an adaptation to regional circumstances, light units, particularly cavalry, were soon also used in Western European conflicts and later on raised and filled with recruits from there.

This article would like to use three case studies to show patterns in these transformation and networking processes.

Hungarian horsemen in the service of the Habsburgs during the 16th and early 17th centuries

After the death of the last Jagiellonian king, Louis II, in the Battle of Mohács, the Kingdom of Hungary fell to Ferdinand I through a hereditary connection with the House of Habsburg. The Habsburgs thus suddenly became neighbours of the Ottoman Empire, whose military strength they had already demonstrated during the first advance to Vienna in 1529. The Hungarian kingdom, which had offered great resistance to the Turks during the late Middle Ages, was in ruins after Mohács and had largely been occupied by them. The Principality of

3 Quot.: Tallett, War and Society in Early Modern Europe, p. VII.

4 Davies: Introduction, pp. 10-12.

5 Bömmelburg / Blaszczyk / Popov: Gewaltgemeinschaften und die Military Revolution im östlichen Europa, pp. 101-138.

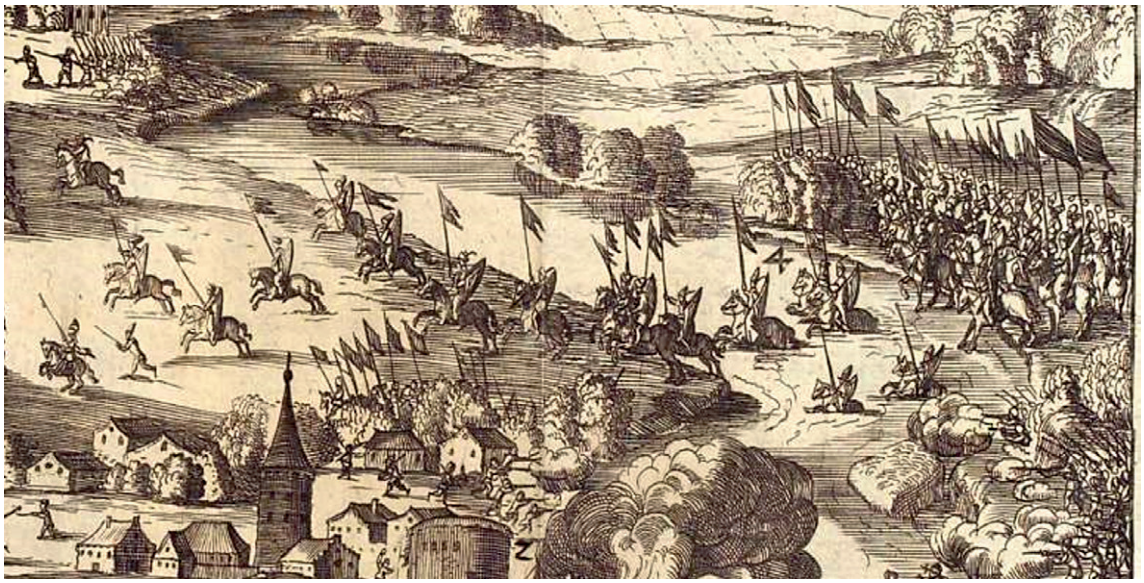

Fig. 1. A troop of "Hussaren", wading the Elbe River during the battle of Mühlberg (1547).. The trapezoidal shield is typical for the East European horsemen [see here, Fig. 2]. Scene N. 4 from a contemporary engraving (*Kayser Carl deß Fünfften Eroberung deß Passes bey Mülberg an der Elbe, neben der Niederlag Churfürst Johann Friderichs auf der Lochauer Heide, da er gefangen und dem Kayser überliefert worden: Welches geschehen im Jahr 1547*). Herzog August Bibliothek, CC BY-SA 4.0, Europeana.

Transylvania also split off from the remaining Christian parts, which in the 16th century repeatedly fluctuated between Habsburg and Ottoman vassal status.[6]

There was constant guerrilla warfare on the border with the Ottoman Empire during the 16th century. To protect their own population, the Habsburgs adopted the "military border" system already established by the Jagiellonian by settling farmers subject to military service at threatened points. A fortress belt was also expanded. Similar to the Roman Limes forts, these fortresses served as garrisons for units of heavy Western European cavalry and light "Croatian" cavalry.[7] These Croats were taken into service as mercenaries. During the Long Turkish War (1593-1606), around 7,000 mercenaries served in the area of the Croatian

6 Fata, Die Rolle des Militärs in der habsburgischen Impopulationspolitik außerhalb der Militärgrenze, pp. 251-264.

7 Àgoston, Empires and Warfare in east-central Europe, 1550 – 1770, pp. 110-134; Rothenberg, The Austrian Military Border in Croatia 1522-1747; Berger, Baut dem Reich einen Wall.; Kaser, Freier Bauer und Soldat.

border, around 30 percent of whom were locals. So-called hussars were also deployed in the Kingdom of Hungary. There is still no consensus about the etymological origin of this term. In connection with the Hungarian origin of the riders, some researchers assume that it is derived from the Hungarian word "húsz", which means "20" and means that 20 houses had to provide one of these riders. The nature of these riders themselves was also very different in the 16th century. In Serbia or the Romanian principalities they probably emerged in the course of the 15th century as light cavalry equipped with lances and sabres, while in Hungary they emerged as heavy, armoured cavalrymen with breastplates, trapezoidal shields, lances, sabres, battle hammers and helmets based on oriental models.[8]

Since, as already mentioned, there was a constant state of small-scale warfare on the Habsburg-Ottoman border in the 16th century, the troops deployed here had a lot of combat experience, which quickly made them a popular reserve for the Habsburgs' Western European wars. Ferdinand I deployed Hungarian hussars in the Saxon theatre of war as early as the Schmalkaldic War (1546/47). An unknown observer of the Battle of Mühlberg even claims to know that the Ernestine Elector Johann Friedrich I was captured by such hussars: "His Imperial Majesty followed them with all mounted troops until night fell, but the hussars and light horse run after them for many miles until Wittenberg. The Saxon [elector Johann Friedrich, A.Q.] was reached by some hussars and appolotanian [neapolitanian, A.Q.] horses not far from the defeat; defended himself with few of his followers and did so bravely, was wounded in the face by a hussar, but had to surrender at last; and while a hussar had taken his sword and dagger, the captured prince of Saxony did not want to surrender to a hussar or a welsh, but to a German nobleman, who was there too and belonged to duke Maurice, named Trott."[9] Several eyewitnesses also report that the hussars not only carried out the first attacks on the Saxon troops retreating to the Lochau woods, but also stubbornly pursued them after the defeat.[10]

In the Balkan region itself, the Croatian-Hungarian military constitution had to prove itself on a larger scale for the first time in the Long Turkish War (1593-1606). Although a number of Habsburg generals who had their military experience in the Balkans in the late 16th and early 17th centuries were able to convince themselves of the performance of the local light troops, this was not

8 Mugnai/Flaherty, Der lange Türkenkrieg, pp. 29-49.

9 Quot. in: Held, 1547. Die Schlacht bei Mühlberg/Elbe, pp. 149-150.

10 Ibid, pp. 131-158.

yet reflected in their military theoretical treatises. In their writings, both Lazarus von Schwendi (1522-1583)[11] and Giorgio Basta (1550-1607)[12] emphasize the importance of enemy reconnaissance, for which they primarily want to use individual scouts, and point out the importance of adequately securing the camp and the military benefits of ambushes, but do not comment on the use of light troops based on the example of the Croats and Hussars.

But with the outbreak of the Thirty Years' War, riders from the Balkans were deployed on a larger scale in the imperial army. Since an anti-Habsburg uprising under Prince Gabriel Bethlen broke out in Hungary at the same time, light cavalry units also supported the Protestant army in Bohemia. The court preacher of Maximilian of Bavaria, Jeremias Drexel, reported an attack by such riders on the night of October 17th to 18th, 1619 near Pilsen: "In a village they surprised seven squadrons of horse of which many were sick. They were attacked at night by the Hungarian horse in their typical vigour. At the beginning they attacked the sleeping and cut them down with their swords, after that they set the village

11 Schwendi had been captain general of the imperial troops in Hungary since 1565. His theoretical work on warfare was not published until almost a century after his death. See: Herrn Lazari von Schwendi, Freyherrn zu Hohen Landsberg, Feyhern zu HohenLandsberg, gewesenen Kayserl. Raths und GeneralLieutnants. Kriegs Discurs, Von Bestellung des gantzen Kriegswesens, und von desselben Aembtern : Vermehrt und verbessert mit nützlichen, aus vieler kriegenden Potentaten und Republiquen Kriegs-Rechten, auch aus bewehrten Authoribus, extrahirten Annotationibus, Darinnen zugleich Die Jurisdiction deren Obristen über ihre Regimenter/ derer Soldaten forum competens, und wie das Kriegs-Gerichte zu bestellen/ beschrieben/ auch das/ bey itzigem Frantzösischen Kriege/ wegen Auswechselung und rantzionierung derer Gefangenen/ aufgerichtete Cartel befindlich istl; Darbey zu Ende zu Ende dieses Büchleins ist der neue Käyserliche und ein Churfl. Sächs. Articulsbrieff annectirt / durch den Chur=Fürstl. Sächs. Regiments=-Schultheissen/ bey der Residentz=Vestung Dresden/ und den darzugehörigen Garden. Christophorum Lobrinum. Dresden In Verlegung Martin Gabriel Hübners ... Gedruckt durch Melchior Bergens sel. nachgelassene Wittwe und Erben, 1676.

12 Basta was commander of the imperial troops in the Long Turkish War (1593-1606) and wrote a number of books that were published after his death. These include, among others, "Il governo della cavalleria leggiera", which was first published in Venice in 1612 and was later translated into German. The German version appeared two years later. After Erik A. Lund, Basta was the first military theorist to comment on light cavalry tactics. However, Schwendi had already described many of the tactics expressed in the Gouverno della Cavalleria, and his account is based exclusively on the reception of the type of Little War that Basta had experienced in the French Huguenot Wars and the Eighty Years' War. He hardly goes into detail about his experiences from the Long Turkish War, see: Lund, Erik A., Basta, Giorgio, Count of Huszt, in: Coetzee, Daniel / Eysturlid, Lee W., Philosophers of War. The Evolution of History´s Greatest Military Thinkers. From Ancient To Pre-Modern World, 3.000 BCE – 1815 CE, Santa Barbara / Denver / Oxford 2013, S. 25-26.

on fire and slayed all they met. So every evil was done to us by the Hungarians […]".[13]

Less than ten days later, Christian von Anhalt, who commanded the Protestant troops, reported on a skirmish near Rakovnik: "No sooner we had deployed when the enemy came up. We had many nice and brave skirmishes, the Hungarians and Poles were chasing each other."[14]

These two short quotes already comprehensively characterize the tasks of the Eastern European light cavalry. They served as the "eyes and ears" of an army, primarily for enemy reconnaissance, and were used for raids on smaller troops stationed in remote locations. They caught the eye of European observers because of their impetuous, one could certainly say "wild" way of fighting. However, they gained their greatest importance primarily for the procurement of forage.[15] Again, Christian von Anhalt reported this on November 3rd, when the Protestant army's food supplies were already running low: "the Huganrians had taken some wagons with supplies and made some prisoners."[16] Drexel describes the battle that preceded this success: „[…] five miles they attacked him [the transport, A.Q.] the Hungarians slayed 70 of our horses. They also attacked the bunch of soldier´s wifes, the children and others on the open country, which they all killed."[17]

The Hungarians and Croats were never to shed their reputation for unrestrained cruelty throughout the war.[18] The question arises as to whether the horsemen from the Balkan region were more brutal towards enemy combatants or the civilian population than other mercenaries. Through an evaluation of personal witnesses from Western and Central European military officers who were deployed in the Great Turkish War (1683-1699) in the Balkans, Jürgen Luh concluded that the military farmers living on the border were crueller in battle than the Turks.[19] It is difficult to determine whether this was due to religious reasons or the constant attacks of the Ottomans. Horst Carl was also able to prove that specific harshness towards the civilian population on the part of the Croatians

13 Quot. in: Milger, Gegen Land und Leute, p. 17. Drexels diary is still unpublished.

14 Quot. in.: Ibid, p. 93.

15 See also: Heilmann, Das Kriegswesen der Kaiserlichen und Schweden zur Zeit des dreißigjährigen Krieges, pp. 40-41.

16 Quot. after: Milger, Gegen Land und Leute, p. 97.

17 Quot. in: Ibid., S. 97.

18 Kroener, Soldat oder Soldateska?, pp. 141-142.

19 Luh, Religion und Türkenkrieg (1683-1699), pp. 205-206.

was an integral part of their mission. During the campaign season, their mobility was deliberately used to devastate large areas of the enemy's territory. If an area was plundered, the Croats moved on. On the other hand, they did not show an excessive negative behaviour in the winter quarters.[20] Michael Weise argued that explanations that blame the origins of the Croats for their supposedly greater brutality are insufficient.[21] In the perception of contemporaries, however, this was not the case, as can be seen from a sentence in the Theatrum Europaeum: "Among them the 40 companies of Croats, Hungarians, Polish and the like Turkish neighbours did the poor Wetterau […] awful damage."[22]

The term "Turkish neighbours" is not chosen by chance but rather implies that those Eastern European troops developed their brutality during the fights with the hereditary enemy of Christianity.[23] The troops described in the Theatrum are even accused of acting "worse than pagans and turcks"[24] in an exaggeratedly symbolic way. Such comparisons imply that the light troops of the Balkan region virtually imported a new quality of violence into the German theatre of war. Although recent studies such as those by Carl and Weise have exposed such interpretations as fallacious, subjective contemporary perception seems to have overshadowed such findings and permanently attributed increased cruelty to Eastern Europeans.

According to Johann Heilmann, the Croats in the imperial service were primarily recruited from the lower Hungarian nobility and were therefore very magnificently equipped.[25] Heilman's depiction is probably based on a depiction from the Theatrum Europaeum, in which battles between imperial Croats and the Swedes in Brandenburg in 1631 are described, „where especially the Croats fought brave" because the Swedes took rich booty from them/ as they had belts of silver and gold/ even hole plates of gold and silver on the breast/ on the heads and brittles of the horses/ also on saddles/ also on pistoles and sabres."[26]

In fact, there are hardly any sources available about the material equipment of the riders, so such magnificent equipment can at least be called into question. However, it seems quite likely that their costume, which was influenced by ori-

20 Carl, Exotische Gewaltgemeinschaften, pp. 157-180.
21 Weise, Gewaltprofis und Kriegsprofiteure, pp. 278-291.
22 Quot.: Theatrum Europaeum III, p. 309.
23 Weise, Gewaltprofis und Kriegsprofiteure, p. 286.
24 Quot.: Theatrum Europaeum III, S. 309.
25 Heilmann, Das Kriegswesen, p. 35.
26 Zit.: Theatrum Europaeum II, p. 315.

ental fashion, still stood out visually in Central Europe.

"Croats" therefore were mercenaries of the classic type and not the border farmers who were forced to serve in Central Europe. The Habsburg military contractors only made use of the available recruit potential at the military border. By the mid-1620s at the latest, the Croats, like all other imperial troops, were regularly paid and fed.[27]

The Croatian horsemen rarely deserted,[28] which further increased their value to the imperial army. The reasons for this are difficult to determine. It is conceivable that the chances of survival of a deserter dressed in exotic clothing, who spoke a different language than the local population and who also had a reputation as a warrior of archaic brutality, decreased drastically away from home.[29] Therefore, mutiny may have been a legitimate means of highlighting one's own needs, but desertion may not have been.

The Croats could also be used in battle. The most famous example of this is the use of the Croatian cavalry under General Johann Ludwig Hektor Graf von Isolani (1586-1640) in the Battle of Lützen, where they bypassed the Swedish right wing, attacked the second line and the train and caused much chaos, ensuring that the Swedes could not take advantage of the withdrawal of Pappenheim's Imperial cavalry.[30] However, this operation remained an exception and even here the Croats were not used in the fight against enemy cavalry, but against the Swedes' rear.

The proportion of Croatian riders in the total strength of the cavalry was not subject to a fixed ratio. According to Heilmann, Tilly's army consisted of 6,900 cavalrymen in June 1631. Of these, 850 were Croats from the Isolani and Colalto regiments (12.3%). A detachment under Count Pappenheim, which Tilly sent ahead of the army in the middle of the month, had 2,600 cavalry men, including Isolani's 600 Croats (23%). The proportion of light cavalry in this formation intended for reconnaissance was already almost a quarter of the total strength.[31] Horst Carl estimates the number of Croats deployed during the Thirty Years' War to be around 20,000 men.[32]

27 Carl, Exotische Gewaltgemeinschaften, p. 173; Weise, Gewaltprofis und Kriegsprofiteure, p. 281.

28 Carl, Exotische Gewaltgemeinschaften, p. 176.

29 That Croats could also become victims of war is described by Weise, Grausame Opfer?, pp. 127-148.

30 See Schürger, Die ersten Minuten der Schlacht von Lützen (6./16.11. 1632, pp. 103-120.

31 Heilmann, Das Kriegswesen, pp. 77-78.

32 See Carl, Exotische Gewaltgemeinschaften, p. 173.

Fig. 2. Hand-colored engraving of a Vlach/Wallachian rider in the 16th century. From *Diversarum gentium armatura equestris. Ubi fere Europae, Asiae atque Africae equitandi ratio propria expressa est*. Abrahamus Bruynus excude 1585 [cum praefactione H.Dammani et A. de Bruyno]. (Wikimedia Commons)

As the war progressed, the increased demand for the Croat as a light cavalryman ultimately meant that his military function was soon decoupled from his ethnic origins. Using church records from Thuringia and Hesse, Detlev Heinrich Pleiss was able to prove that many of the "Croats" billeted here in 1634/35 who entered into marriage relationships with local women actually came from Poland, Carinthia, Bavaria, Württemberg, Vienna and Swabia.[33] If one asks about a globalization effect of wars, it can be found primarily in this circumstance: if ethnic groups were initially transplanted from one region to another in order to take advantage of their "inherent" military qualities, then after a certain time the locals were able to copy these military characteristics and soon imitate them theirselves. The reputation of cruel Eastern Europeans remained with the Croatian units throughout the war, even though the individual units were now largely made up of Central Europeans.

After the Thirty Years' War, "Croats" were co-opted by the Western European military in a variety of ways. The establishment of a Croatian company for the lifeguard of the Saxon Elector John George II probably stemmed primarily from a penchant for their exotic appearance.[34] Furthermore, even a hundred years later, the term Croat seems to be associated with a particular style of fighting.[35] In the caption of the drawing of a Prussian soldier from the Freikorps Gschray from the Seven Years War one can find the title "Preußs: Croat".[36] This certainly does not refer to the origin of the soldier depicted, but to the fact that the free battalions were primarily used in the small war.

Hussars and other light troops in the Spanish Succession and the Great Northern War

At the beginning of the 18th century, two major and long-lasting wars kept almost all of Europe in suspense: the War of the Spanish Succession and the Great Northern War. Many, especially the German officers, who led armies in

33 See Pleiss, „wer zählt die Völker, nennt die Namen…", pp. 465-466.

34 See Schuckelt, Kroatische Reiter, pp. 100-107.

35 A new doubtable reputation they won in the War of the Austrian Succession, see Batelka, „Kroaten und dergleichen Gesindel, pp. 107-126.

36 The handwriting is owned by the Herzogin Anna Amalia Bibliothek and is digitalized: : https://haab-digital.klassik-stiftung.de/viewer/!image/1373196092/410/. The caption claims that the soldier belongs tot he „Geschraischen Corps" „1761 aufgerichtet". However, General Johann Michael von Gschra´s corps was made u pof dragoons. The uniform oft he men seems to belong tot he corps Barowski.

these wars had recently gained their first military experience in the Great Turkish War in Austria and Hungary. It is therefore hardly surprising that they incorporated the experiences gained during their baptism of fire into the design of their armies. Many were directly or indirectly students of the great Raimund Count Montecuccoli. In his military theoretical writings he had already described an ideal army of 50,000 men, which should include 3,000 men of light cavalry.[37] According to the count's ideas, such an army should be used directly against the Turks. Montecuccoli's art of war also tried to avoid battles and instead to operate primarily against the enemies supply lines. This is precisely why he needed a mobile force, which „beats his parties and fouragiers, took his convois and burns his camps and supplies […].“[38]

One of the soldiers influenced by Montecuccoli was Margrave Ludwig Wilhelm of Baden. In 1683 he distinguished himself for the first time during the relief of Vienna and then gained further combat experience in Hungary, where he was also able to see for himself the effectiveness of the local light cavalry. When Ludwig Wilhelm became commander-in-chief of the imperial troops in the Nine Years War in 1693, he also demanded for the first time that the emperor transfers Hungarian hussars.[39] The Margrave avoided a major field battle in those years. The "small war" waged by the hussars became all the more important. The light horsemen operated in the hinterland of the French armies and significantly disrupted their supply and communication lines. They also worked with the so-called "snapcocks" [orig.: "Schnaphähne"]. These were mostly brigands who took advantage of the war to act as irregular combat units of the Imperial troops.[40]

In fact, Austria began integrating hussars into its regular army starting in 1688.[41] This year, the first regiment was set up, although the general attitude of the Vienna government towards the various troops on the military border, which were also religiously heterogeneous and classified as tending to be anti-Habsburg, became increasingly negative.[42] Johann Friedrich von Flemming reports that the French army also set up a few companies of its own in the Nine Years War in 1692 from captured or deserted imperial hussars: „Many hussars,

37 Quot.: Ausgewählte Schriften des Raimund Fürsten von Montecuccoli, Vol. 2, p. 461

38 Quot.: Ibid., S. 269. See also: Schnitter/ Schmidt, Absolutismus und Heer, pp. 137-139.

39 Oster, Markgraf Ludwig Wilhelm von Baden, p. 215.

40 See Fritz, Kriegsführung – Kriegskriminalität – Kriegsflüchtlinge, pp. 159-181.

41 Allmayer-Beck, Die kaiserliche Armee im Türkenkrieg, p. 83.

42 Fata, Die Rolle des Militärs in der habsburgischen Impopulationspolitik, pp. 251-264.

most of them deserters, of the Imperial army went to France and had themselves employed by some French officers. The Marshal de Luxembourg, when he saw that many of them were of good and defiant character and equipped extraordinary, found hope to use them. He collected them and send them on party from time to time which went well.“[43]

Flemming reports that the French initially set up three companies and eventually wanted to recruit an entire regiment. However, Baron von Corneburg, a former Imperial lieutenant who had been appointed colonel of the new formation, gambled away the advertising money and the project was later dropped.[44]

During the War of the Spanish Succession, Margrave Ludwig Wilhelm again called for hussars for the Imperial troops and tried to use them against the supply and communication lines of the French troops. As early as 1701, when the looming conflict seemed to be unavoidable, the margrave began to think about the defense of the Upper Rhine area and wrote to the emperor: “The offered hussars would be useful in a declared war when they could be brought into the enemies country and I hope his Imperial Majesty will always keep a considerable number with his army, but I ask not to send them now, as we lack accommodation for them and they would make a great mess in your countries.“[45]

The hussars were therefore considered undisciplined and even in times when the billeting system regularly led to conflicts between the military and the civilian population, the “Türkenlouis” feared complications if he also had to take care of the hussars’ accommodation.[46] On the other hand, he considered these to be ideally suited “when they could be placed in enemy lands”, i.e. used against the enemy’s rear and supply lines.

This judgment about the hussars was confirmed after the start of the war, when the margrave’s light cavalry operated in the Moselle valley. These areas belonged to the Electorate of Trier and it wasn’t long before the Margrave received a number of complaints about their excesses. Ludwig Wilhelm reported to the emperor on January 30, 1703 that the hussars acted “according to their habit of robbing and plundering,”[47] implying that this behavior was in the nature

43 Quot.: Flemming, Der Vollkommene Teutsche Soldat, p. 112.

44 Ibid, p. 112.

45 Quot.: Diersburg, Kriegs- und Staatsschriften des Markgrafen Ludwig Wilhelm von Baden, p. 30.

46 On August 25 1701 the marggrave confirmed this attitute and wrote to the emperor that it would be better , „to send a regiment of cuirassiers or dragoons from which better discipline could be expected“, quot.: Ibid., p. 38.

47 Quot.: Ibid, p. 126.

Fig. 3. Hungarian Husar Colonel, 1703. From *Neu-eroeffnete Welt-GALLERIA, Worinnen sehr curios und begnügt unter die Augen kommen allerley Aufzueg und Kleidungen unterschiedlicher Staende und Nationen* …. Kupferstiche von Christoph Weigel der Ältere, Nürnberg, nach Caspar Luyken, 1703, fig. 60. (Wikimedia Commons).

of the Hungarians. He therefore came to the conclusion that "this rabble must be the worst Canalia from Hungary".[48]

When Marshal Villar's troops advanced into Bavaria in 1704, Ludwig Wilhelm - much to the displeasure of Prince Eugene and the Duke of Marlborough - once again avoided a decisive battle and instead simply let his hussars off the leash. He justified his decision to the emperor: „This council […] did not demand a battle […] but for a hussar war [orig.: Hussaren krieg] which, when fought with reason […] makes more trouble as other manners of war, as one always faces the danger, to see country and folks plagued, but rarely can hope for a victory against such a fleeing enemy."[49]

These lines are particularly interesting because Ludwig Wilhelm already referred to this form of warfare as "Hussar War," which makes it clear that his strategic decisions are a result of his experiences in the Balkans. In addition, this form of war can already be determined terminologically and is directly linked to the characteristics of the Eastern Europeans.

After the armies of Prince Eugene and the Duke of Marlborough had turned to southern Germany over the course of the summer, the small war expanded more and more. Since Elector Max Emanuel remained bottled up in a fortified camp near Augsburg to await further French reinforcements, the Allies began to systematically plunder the west of Electoral Bavaria in July. In this way, 400 villages with 7,675 homes were destroyed within five weeks.[50] Marlborough himself described this type of warfare in a letter to his wife Sarah on July 30th: "We sent 3,000 hussars this morning towards his capital, Munick, with orders to burn and destroy all the land in the area. This is so contrary to my nature that only absolute necessity could have caused me to submit to this measure, for these poor people only suffer for the ambition of their master […]"[51]

Electoral Bavaria also recruited its first hussar regiment in 1688, but it was disbanded in the same year. In 1702, during the War of the Spanish Succession, a new company was formed from captured Imperial hussars. In 1704, it was strengthened into a regiment of four companies, but was immediately reduced to a squadron again in the wake of the defeat at Höchstädt.[52] What is interesting

48 Quot.: Ibid., p. 126.

49 Quot.: Oster, Markgraf Ludwig Wilhelm von Baden, p. 319.

50 See: Junkelmann, Das greulichste Spectaculum, pp. 28-33.

51 Quot. in: Ibid., p. 33.

52 Junkelmann, Marcus, Kurfürst Max Emanuel von Bayern als Feldherr, München 2000, pp. 26-27.

here is that Bavaria, like France, apparently only relied on Imperial deserters in the Nine Years War and did not try to form hussar units out of ordinary recruits. This also underlines that only the Eastern Europeans were considered suitable for service as light horsemen.

The Imperial Army continually moved new hussar formations into the empire. According to Wilhelm von Baden's reports, in the summer of 1705 he had six regiments (Lehozki, Czaki, Colonitsh, Gombos, Czonggenberg and Esterhaszi), some of which were very weak, at his disposal.[53] The extent to which these were regular formations of the Austrian or Imperial Army would have to be examined in more detail, as the official Austrian army histories only list three regular regiments for this period.

During the Great Northern War, the Electoral Saxon army also quickly adapted to the realities of regional warfare and the requirements of the vast but sparsely populated Polish area. At the beginning of the war, the army, like almost all other Western European armies, only had cuirassier and dragoon regiments.[54] But for the 1702 campaign, the army sent to Poland was to be reinforced by irregular cavalry in the form of 800 Vlachs and 200 Tartars. This is at least evident from the provisions budget, which states the needs of these troops. Accordingly, each rider should only receive a portion, but not a ration, for his horse. In contrast to military horses, these were used to the simple green fodder that meadows and bushes offered them, which made the maintenance of these troops particularly inexpensive.[55] The Saxon army quickly recognized the potential of the riders as reconnaissance agents. They did not have great combat power, but were more nimble and mobile and were intended to form the "eyes and ears" of the army in the coming campaign.

However, the sources do not indicate that such Vlachs and Tartars continued to be recruited by the Electoral Saxon army itself in the following years until the Peace of Altranstädt in 1706. Only after the reconquest of Poland in 1709 did the Saxon army again resort to local tribes. Lieutenant General von Brause, who commanded the troops stationed in Poland in 1710, received extensive instructions from General von Flemming, which also concerned the maintenance of light units. Point 13 states: „After we recognized for some time that this army lacks good partisans which an army needs and are to be used to great advantage,

53 See Diersburg, Kriegs- und Staatsschriften des Markgrafen Ludwig Wilhelm von Baden, p. 124.

54 See Querengässer, Das kursächsische Militär im Großen Nordischen, p. 42-44.

55 See SächsHstA Dresden 11237/ 10844/4, without fol.

so the Lieutenant General will take care, that this lack will be redaressed and each regiment will provide a certain number, as the greatest use of this craft is their knowledge of the country, of all passes, rivers, bridges, ditches, trails and what else can be of use."[56]

However, these partisans should not be recruited in large numbers, but rather "at least four in each regiment",[57] meaning that they could only serve for reconnaissance. At least it shows that the Saxon army tried to adapt better to the peculiarities of the Polish theatre of war. During the Tarnogrod Confederation's uprising in 1715, the General Prince of Saxe-Weissenfels received instructions to reinforce his corps with Tartar auxiliary troops. "Whenever one has collected mentioned tartars, they could be used for parties."[58]

These units were not yet regular formations, i.e. formations that had been recruited and formally mustered into service, but rather auxiliary troops that were recruited for a very limited period of time, usually only for one campaign season. However, as part of the army reorganization measures that followed the Peace of Altranstädt, August the Strong attempted to establish regular light cavalry units within the Electoral Saxon army. The desire to recruit Hungarian hussars arose as early as 1709, when Field Marshal Ogilvy sent Colonel D'Auteil to Vienna. He was tasked with recruiting capable men for two complete regiments of 1,137 men each with the help of Prince Eugene. The riders should carry good horses, carbines, pistols and pallas and the first line should be armed with Hungarian copia lances. D'Auteil also received specific instructions regarding the mounts to be purchased: "And so that these regiments will look that better and distinguish themselves from the light horse already in Poland, it would be of great help, if they would bring their own dress, the officers provided with tiger furs, the other with wolf furs."[59]

This instruction shows that the hussars should be adopted not only in their military function as light cavalry, but also with their regional costume, which probably also applied to Augustus faible for exotic costumes, as he also formed units of Turkish janissaries and Hungarian haiducks. But by having the clothing regulated, the potential employer immediately robbed it of its authenticity.

However, the colonel had to report to Dresden on January 12, 1709 that good officers for these regiments were "in this times of war difficult to find, especially

56 Quot.: SächsHstA Dresden 11237/10908/3, without fol..

57 Quot.: Ibid, without fol.

58 Quot.: SächsHstA Dresden 11237/522, without fol..

59 Quot..: SächsHstA Dresden 11237/516, without fol..

as the service with the hussars is not honourable to everybody."[60] In addition, it would be impossible for him to get a fully equipped man with a horse, weapons, red uniform and the required furs with 30 thalers in advertising money.[61] The project could therefore not be implemented for the time being. D'Auteuil's failure highlights a problem with globalization. As soon as certain military characteristics linked to small ethnic groups became commodities on the mercenary market, they were subject to supply and demand. Since almost all of Europe was at war at the beginning of the 18th century and the demand for Hungarian hussars increased, it was sometimes difficult to find men on the market. In addition, the service was held in low regard among the regular troops, which is why it was difficult to find experienced and willing officers for them.

It was not until 1713 that August the Strong managed to recruit 181 hussars for Saxon service.[62] They mostly came from the Hungarian rural nobility and were officially mustered into the army in two companies. The imaginative uniform ideas of 1709 had now given way to more sober clothing. The service obligation stipulated that the hussars should be provided with cloth for red coats, white coats, light blue camisoles and trousers every two years. After the companies were mustered in March 1713, it was said that "considering the men, so not much is to complain about, but the horses are bad, so that nearly half of them have to be mustered out, however will be able to follow during a slow march."[63]

In the same year, a Hungarian noble company with a budget of only 39 men joined these hussars. They brought horses, saddlery and sabres with them for service and received their uniforms from the army. However, the company did not prove itself and was disbanded again in 1715.[64] The remaining two hussar companies even survived the first army reduction that took place as a result of the peace treaty in Warsaw in 1717 and were only reduced in size by 10 riders. In July 1718, the Elector-King had all the hussars combined into a single company. This survived until July 29, 1722.[65]

The establishment of light troops was also soon reflected in the combat instructions for the army. General von Wilcke noted this in 1713 regarding the use of light cavalry: "When light cavalry, such as hussars or tartars are at hand by

60 Quot.: Ibid., without fol.

61 Ibid., without fol.

62 SächsHstA Dresden 10026/1147/11, fol. 5-6 contains a roster.

63 Quot.: Ibid., fol. 37.

64 Ibid., fol. 33-34, 82.

65 SächsHstA Dresden 11237/29, fol. 89-96, 109.

the army, they will follow the enemy and will not let him out of sight."[66]

The dissolution of the light units within the Electoral Saxon army after the Great Northern War did not mean that the Saxon army leadership misjudged their qualities. The union with Poland meant that there was still excellent recruiting potential for "original" light Polish cavalry troops, like the new established Uhlans. Already during the Zeithain camp in 1730, August the Strong moved two such lancers polks to Saxony.[67] While this may perhaps be dismissed as a representative gimmick to create an exotic flair within the camp, the use of Polish Uhlans in the First and Second Silesian Wars had a clearly military character.[68]

The dream armies of Maurice of Saxony

Maurice of Saxony (1696-1750)[69] was - as far as is known - the first of the illegitimate sons of the Saxon Elector Friedrich August I. He enjoyed a military education at a young age and in 1706 immediately received the rank of colonel in a cuirassier regiment. He gained his first military experience in the War of the Spanish Succession in Flanders, then in the Great Northern War in Pomerania and later during the uprising of the Confederacy of Tarnogrod in Poland, where he independently commanded a dragoon regiment for the first time. In 1717 he served in the small Electoral Saxon corps that fought under Eugene of Savoy in the Venetian-Austrian-Turkish War. In 1720 Maurice moved into the French service, where he spent most of the rest of his life. This time was only interrupted by a short phase from 1726 to 1729, when he was elected Duke of Courland and stayed in Poland again. The duke had several opportunities to deal in detail with the war in the Balkans, but especially in Poland. These experiences would shape him throughout his life.[70]

In 1732, Maurice wrote his "Reveries," a memorandum that he had originally intended to reform his father's armies.[71] Maurice´s military theoretical writings did not appear until a few years after his death. "Mes rêveries. Ouvrage posthume de Maurice comte de Saxe" (Amsterdam/Leipzig 1757) would be translated into German within the same year.

66 Quot.: SächsHstA Dresden 11237/10929/7, without fol.

67 Müller, Die Armee Augusts des Starken, pp 14, 88-90.

68 Gralik, Polish epidsode of the Second Silesian War, pp. 83-95.

69 See Treffer, Moritz von Sachsen; Weber, Moritz, Graf von Sachsen; Ranfft, Leben und Thaten des weltberühmten Grafens Mauritii von Sachsen.

70 Treffer, Moritz von Sachsen, p. 30-183.

71 Ibid., p. 159.

Fig. 4. Vision for a lancer by Maurice de Saxe, *Mes Rêveries, Ouvrage postume*, chez Arkstée et Merkus, À Amsterdam & à Leipzig 1757, Tom. I, planche XXXI. This horseman is similar to Polish pancerni or winged hussars, known to Maurice.

Many of Maurice's ideas must have seemed rather backwards to his contemporaries at the time. The count wrote, among other things: "I don't know why the entire cuirass was abolished in the cavalry, since nothing is more beautiful and advantageous than it."[72] Maurice had still seen riders fully equipped in armor in the ranks of his father's Polish troops. The Saxon and Austrian cuirassiers who went out against the Turks in 1717 also still had breastplates. Meanwhile, the count's ideas arose not only from his own observations, but also from the study of military literature. For example, he writes about the armament of the cavalry: "The first rank must carry lances. Montecuculi says in his War News that the lances are the best of all the weapons that the cavalry wields, because nothing can withstand their attack; only the lancers would have to have full armor."[73] This also reflected the original instructions for the Saxon hussar companied in the Great Northern War.

In principle, Maurice divides the cavalry in the "Reveries" into two sorts according to the style of the time, the heavy cavalry (cuirassiers), which he wants to use exclusively as battle cavalry, and dragoons. Of the latter, an army should have at least twice as many regiments as cuirassiers. The ideal dragoon was small in stature ("but never more than five feet and two inches"[74]). Dragoons were supposed to have light and agile horses and be armed with guns, swords and lances. Maurice recommended that they also be trained as infantrymen, which was common practice in most armies of that time anyway. "These dragoons are now supposed to carry out small commands for the army, constantly hold the field, provide cover and always worry the enemy. This would be what one would have to say about the cavalry in general."[75]

In addition to these rather conservative pieces of advice, the "Reveries" also reflected very innovative ideas that were clearly influenced by Maurice's experiences in Eastern European theaters of war.

From a tactical point of view, Maurice assumes in his "Reveries" that well-trained dragoons were superior in battle to the hussars, who were rarely subjected to precise drills at the time.[76] But during the War of the Austrian Succession he gained extensive experience in Bavaria and Bohemia fighting against the Austrian light troops, which became increasingly important in the middle of the

72 Quot.: Graf von Sachsen, Einfälle über die Kriegskunst, p. 21.
73 Quot.: Ibid., p. 23.
74 Quot.: Ibid., p. 21.
75 Quot.: Ibid., p. 21.
76 Ibid., p. 29.

century. A letter that the count wrote to Frederick II of Prussia in October 1745 impressively reflects the experiences he gained during the war. In it he explained that there were two types of warfare, one that followed the traditions of the Romans and relied on discipline and precise maneuvers, and the other that of the African and Asian peoples, who preferred rapid forays.[77] Maurice also initially linked these characteristics to an ethnic origin. „V.M. a pu voir, dans le cours de cettes guerres, quel avantages on peut tirer des troupes légères, et elle y a remédié autant qu´ elle a pu.“[78]

At this point, Moritz had already tried to put these new perceptions into practice. In 1743 he set up a regiment that shows a great influence from Eastern European cavalry traditions. Approval for the establishment of the “Volontaires de Saxe” was given by royal decree on March 30, 1743. Moritz Regiment consisted of six brigades. Each brigade had 46 men. The volunteers were supposed to be Poles, Tartars or Valachs, who were equipped with sabres and lances, were uniformed in Tartar costume and received a cuirass.[79] The example of the volunteers quickly caught on. In 1743, a second Uhlan regiment was set up in France under the Dane Ulrich Friedrich Waldemar von Löwendahl, which, like the Volontaires, proved itself in the coming campaigns. Löwendahl also spent part of his career in Eastern Europe and served as a Russian officer in Crimea.[80]

Exact pictorial representations of the volunteers probably do not exist. However, Michael Ranfft, who wrote the first biography of the Duke in 1746, described them as follows: „He created at that time hussars[81] with approval of the king, which, to be better protected against sabre thrusts, received iron cuirasses [….} which are to be carried easier as any other habit.“[82]

Ranfft’s depiction is based on the armoured riders described by Moritz in his Reveries. The French-language edition of Reveries, printed in 1757, also

77 Oeuvres de Frédéric le Grand XVII, pp. 301-302.

78 Quot.: Ibid., S. 302.

79 Treffer, Moritz von Sachsen, pp. 208-209.

80 Ibid., p. 209.

81 For using this term Weber, Graf von Sachsen, S. 190 critizised Ranfft, „who in wrong fashion spoke of a regiment of hussars“. However, this term has changed ist meaning, as in Poland a „huszar“ until the middle of the 18th century decribed the famous winged hussars or noble armoured horse, to those Maurice´s volunteers possibly looked more similar as to the uhlans, which have been light cavalry without armour and became known to western European spectators first at the famous camp of Zeithain in 1730, see: Müller, Die Armee Augusts des Starken, pp. 14, 88-90

82 Quot.: Ranfft, Leben und Thaten Mauritii, S. 152.

contains an engraving of a lancer, probably designed by Moritz himself. He wears full armour with arm and greaves and a helmet, similar to those still used in Eastern Europe. Ranfft must have been aware of these engravings. The Volontairs de Saxe, set up in 1743, in no way corresponded to these designs. As described, they were only lightly armed and were more like the more modern, unarmoured Uhlans that August the Strong had already presented at the Zeithain camp. They are also captured in this form in the contemporary French engravings by Philibert-Benoît de La Rue.[83]

The enlisted Eastern European minor nobility, who formed the backbone of the formation, served primarily as lancers, their servants (Polish: Pacholke) as dragoons.[84]

During Moritz's lifetime, the volunteers attracted a lot of attention in France. While the exotic uniforms modeled on Polish Uhlans, Ukrainian Cossacks, Crimean Tartars and Hungarian Hussars caught the attention of the population, experts were very impressed by the Uhlans' armament with the lance. Western European armies had banned the lance from their arsenals at the latest in the early phase of the Thirty Years' War. From the middle of the 18th century, lancer formations were occasionally introduced again in the French, Prussian and Austrian armies, and in the 19th century the lance even became the standard weapon of the cavalry again in many armies.[85]

However, Moritz Volontaires did not just recruit real Poles to give them a semblance of authenticity and exoticism. It is very likely that Count Flemmings knew "Der Vollkommene Teutsche Soldat," which says: „The Poles are not really good soldiers, they could be used best as raiding parties, they could not be commanded as well as regular soldiers."[86] Flemming, like the count in his letter to Frederick II and many others before him, equated ethnic origins with certain military characteristics, which was still a widespread view in the 18th century.[87]

Later, the young generals of the revolutionary era took up many of Moritz's concepts, such as the creation of mixed legions.[88] However, the Volontaires as

83 Sapin-Lignières, Les troupes légères de l'Ancien régime, pp. 177-181.

84 Ibid., p. 181.

85 Müller/Kölling, Europäische Hieb- und Stichwaffenpp. 118-119.

86 Quot.: Flemming, Der Vollkommene Teutsche Soldat, p. 41.

87 See Duffy, The military Experience in the Age of Reason, p. 18: „Eigteenth-century officers frequently wrote about the great differences in character and attainment which existed between the armies oft he various sovereigns."

88 See.: Schnitter/Schmidt, Absolutismus und Heer, pp. 145-146.

Fig. 5. Uhlan of the Volontairs de Saxe. Philibert Benoist de la Rue (1718-80), *Nouveau recueil des troupes légères de France*, 1747, Bibliothèque Nationale de France (Wikimedia Commons).

lancers did not initially prevail. After the count's death, the regiment was converted into a dragoon regiment. It was only the increased use of exiled Poles as lancers during the Revolutionary and Napoleonic Wars that helped this type of weapon achieve a breakthrough.

Conclusion

As the 18th and early 19th centuries progressed, hussars and lancers became an integral part of all major European armies as light cavalry. The uhlan armed with a lance retained this significance until the First World War.

The armies of the major Central European powers made the decisive leap in development during the Silesian Wars.[89] Frederick the Great increased the number of his hussars from 9 to 60 squadrons during the First Silesian War alone. Austria raised 13 new regiments between 1734 and 1756. In contrast, the strength of light units in countries without direct contact with the Eastern European theatre of war still remained low. At the outbreak of the Seven Years' War, France only had four hussar regiments - despite the increasing number of military studies on such troops.[90]

The Prussian and Austrian regiments of this time were now rarely troops of Eastern European origin. Of the 16 hussar regiments that the Austrian army had in 1756, only four came from the border regions (Slavonian, Warasdiner, Karlstädter and Banal Hussars), the rest were recruited in the traditional way from the local population.[91] The origin of the troops was no longer important for their form of combat and method of operation, as this could now also be adopted by the Central European armies and adapted to their own needs. However, by subjecting these formations to regular drill like other cavalry formations, they lost some of their original qualities as raiders.

Their uniforms in particular can be seen as impressive visual evidence of the Eastern European origins of these associations. Even though the riders themselves were no longer recruited from the original population groups in the course of the 18th and 19th centuries, the laced pelisse or attila based on the Hungarian model remained an unmistakable fashion attribute of the hussar throughout Europe, and the Polish chapka and the lance remained the same of the Uhlan.[92]

89 See Batelka, „Kroaten und dergleichen Gesindel".

90 Luh, Kriegskunst in Europa 1650 – 1800, pp. 157-158.

91 Duffy, Instrument of War I, pp. 120-123.

92 See Abler, Hinterland Warriors and Military Dress., pp. 47-65; Querengässer, The King´s

However, these were no longer authentic traditional costumes, but only items of clothing that suggested authenticity and were adapted to the fashionable tastes of the time, which led Christopher Duffy to make the somewhat exaggerated judgment: „As eighteenth century wore on, the ranks of the light cavalry were swelled by newcomers, like light dragoons, cheveaux légers, chasseurs à cheval, lancers and so on, who helped to satisfy a demand for fancy uniforms and titles […]“[93]

Using the selected case studies, I hoped to be able to demonstrate that the Eastern European military system, especially “light cavalry”, had a not insignificant influence on those Central European states that were territorially connected to Eastern Europe in the course of the early modern period, like the Habsburg Empire or Electoral Saxony during the time of the Polish Union.

The adoption of Eastern European military practices in the field of light troops usually took place in three stages. It began with the personal war experience of Western European military personnel in Eastern Europe. In the 17th and 18th centuries, many of these officers wrote military theoretical writings that processed these experiences and developed insights for Western European warfare. Finally, light (mostly cavalry) units were set up in the armies of these states based on these perceptions. The example of Count Moritz of Saxony is ideal for this model, because he combines all three stages in his career. It remains to be examined whether corresponding military theoretical treatises, possibly in unprinted form, already exist for the Habsburg military of the 16th century.

Finally, a fourth stage of development can be identified. With the establishment of light units within the armies, the origin of the recruits became less and less important compared to appropriate tactical training. This can partly be observed among the Croats in the Thirty Years’ War. However, the “German Croats”, which were increasingly evident from the mid-1630s onwards, were primarily used to supplement existing formations and not to set up new ones. The use of ethnically “pure” hussars in the Spanish Succession and the Great Northern War shows that the Balkan peoples and Poles were still considered to have special expertise in the Small War. It was only in the middle of the 18th century that the fourth stage of development described above came into greater use. However, Christophers Duffy’s judgment about the impact on their effectiveness should be questioned through detailed studies: „With the advantage of hindsight, we can see that the future of light forces lay not in the hands of the

Coat, pp. 179-180.

93 Quot.: Duffy, The military Experience in the Age of Reason, p. 117.

native wild men, nor in those of the brigand-like free corps, but rather with the versatile regulars.“[94]

This fourth stage ultimately accounts for the actual globalization effect. While stages one to three merely represent forms of knowledge or technology transfer (here in the sense of human resources), it is only through the reception of this knowledge and the unbundling of military capabilities with an ethnic connotation that one can actually speak of dissemination or globalization.

This article is based mostly on the evaluation of printed sources and partly very old research literature, in which the question of military cultural transfer from Eastern Europe did not yet play a role. The English-speaking research, represented by Roberts, Parker and Black, recognizes an influence of the “Military Revolution” from Eastern Europe, but, as shown in the introduction, sees this more as an adaptation of the military system by Central European states than as a direct integration of Eastern European military culture by the West. The example of the introduction of light troops within the Electoral Saxon Army in the Great Northern War, which the existing research literature has so far only touched on marginally, shows that a further research and evaluation of relevant archive documents in Vienna, Paris or Berlin is appropriate in order to achieve this to further substantiate the theses put forward.

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94 Quot.: Ibid., S. 278.

Fig. 6. Contra-Guérilla 2ème escadron of the Imperial Mexican Army 1865. He combines a hussar style Attila with a non-regulated sombrero and demonstrates, how fashionable attributes were adopted, modified and combined by Western armies in the 19th century. (Prints Drawings and Watercraft from Anne S. K. Brown Military Collection. Brown Digital Repository. Brown University Library, item bdr 231317). https://repository.library.brown.edu/studio/item/bdr:231317/

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Cavalry Warfare in the Eighteenth-Century World

Jeremy Black

'Cannon and fortifications now form an impregnable barrier against the Tartar horse.' In his *History of the Decline and Fall of the Roman Empire* (1776-88),[1] Edward Gibbon's affirmation that civilization had wrought a key change in geopolitics very much reflected the Enlightenment notion of change through stages; one in which cavalry was placed as the past and thereby becoming redundant. Gibbon also saw the Westernization of Russia as significant. In part, change in Russia represented a move not only in terms of the subjugation of non-Western cavalry but also the development of Russian cavalry methods. Alexis (r. 1645-76) and, even more, Peter the Great (r. 1689-1725) rejected dependence upon the noble cavalry of the feudal host, although his borrowing from Western models was castigated in Ivan Pososhkov's *On Military Tactics* (1701).[2]

The dominance of the military historical imagination by the European account is again seen in the history of cavalry and in a double sense. Cavalry is generally visualized in a dichotomy, either as primitive 'horde' or as European, as with John, Churchill, 1st Duke of Marlborough's successful drive through the French centre as the culminating blow in the major victory at Blenheim in 1704. Secondly, there is the reiterated narrative in both cases of the decline, and should-be demise, or at least relegation, of cavalry.

This account takes on added force not only with the discussion of greater infantry capability as flintlock muskets equipped with bayonets replaced the matchlock-pike duality in the late seventeenth and early eighteenth century; but also due to the sense of new and potent beginnings in war with the infantry

1 Gibbon, *Decline and Fall*, ed. J. Bury, IV, 167.

2 O. Rusakovskiy, '"Foreigners are said to be wise and honest but they teach us false things": *On Military Tactics* by Ivan Pososhkov and Western military traditions,' *War in History* (2021).

tactics of the American and French Revolutionary units from 1775 and 1792 respectively. The bayonet rapidly had an impact. Thus, at the battle of Fleurus (1690), some German units attracted attention by repulsing French cavalry attacks although unsupported by pikes.

In every respect, this account of the period can, in practice, be queried as far as Europe is concerned; but, at the outset, it is necessary to look at the wider global context. Here there are the problems with notions of a "Military Revolution" based on infantry firepower as, for example, seen with the discussion of the major British success under Robert Clive over the Nawab [ruler] of Bengal at Plassey in 1757. This victory in practice owed much to disunity in the Nawab's forces. There were certainly important instances of successes for infantry and artillery in India. At Patna in the Ganges Valley (1764), "a severe fire of [British] artillery soon drove them [Indian cavalry] back," although it had also had the same impact on attacking Indian infantry. Later that year, at Buxar, British grapeshot and bayonets blocked the Indian cavalry.[3] In 1761, Major John Carnac of the East India Company's Bengal army, argued that it was foolish to have non-native cavalry in the British forces as the British "immense superiority" over native powers, he claimed, rested in infantry.[4] However, infantry successes were not the only issue. Cavalry could have a successful role, as in 1760 when an attack by that of the Nawab of Bengal [a pro-British one] helped the British defeat a Mughal army.[5] In addition, the threat from Haidar Ali of Mysore in south-east India to British interests focused on light cavalry. A British officer recorded in 1768, "a large body of the enemy's horse constantly hovering about us, and often carrying away numbers of our bullocks, baggage etc."[6] Short of cavalry, the Company's forces could not respond effectively, while Haidar's cavalry hit the British ability to raise taxes. In 1769, this cavalry ravaged the Carnatic, advanced as far as Madras (Chennai) and dictated peace to the British authorities there. In response, a British officer reported from Calcutta in 1770:

> "Nothing will be more dangerous than to prove to the enemy where their strength really lays. *It is in cavalry*. Experience has proved upon the coast [the 1767-9 war with Mysore], and it may happen to us in Bengal if our enemies … should once make use of their cavalry as Hyder Ally did

3 Journals of Alexander Champion and Captain Harper, BL. IO. (London, British Library, India Office papers) FI/Misc/198, pp. 35-6, 99-107, IO. Mss. Eur. Orme OV 219, pp. 26-30, 39-44.

4 Carnac to Clive, 24 Jan. 1761, BL. IO. Mss. Eur. G.37, Box 29.

5 Gilbert Ironside to John Holwell, 23 Feb. 1760, BL. IO. Mss. Eur. G.37, Box 28 f. 58.

6 Anon. to --, 7 Sept. 1768, BL. IO. Mss. Eur. Orme 197, pp. 119-20.

Fig. 1. Mysore cavalry against an EIC infantry square at Pollilur (Parambakam), 10 September 1780. Detail from one of the three copies of a painting commissioned in 1784 by Tipu Sultan as part of a large mural for his new Daria Daulat Bagh Palace. Gouache on paper, 10 sheets of paper on canvas, mounted on restoration fabric, 962 × 200 cm, private collection. Public Domain in India (Wikimedia Commons).

> his, how much more formidable they would be, if disciplined by Europeans as our sepoys are. An enemy cannot act or even keep the field without horse."[7]

In 1780, in a renewed conflict, a British square was fought down at Parambakam by repeated attacks by Mysore cavalry and infantry supported by more numerous cannon. Haidar's cavalry was described in 1791, during another conflict with Britain, as "the most diligent and enterprising light troops in the world."[8] In 1781, George, Lord McCartney, Governor of Madras, bewailed the problems of fighting Haider Ali including "the want of cavalry essential to oppose Haidar with real effect."[9]

So also with the Marathas in west India. In 1770, a member of the Bombay Council opposed hostilities with the Marathas citing the latter's cavalry.[10] In

7 Quoted in G.J. Bryant, 'Asymmetric Warfare: The British Experience in Eighteenth-Century India,' *JMH*, 68 (2004), p. 451.

8 Major Skelly, narrative, BL. Add. 9872 f. 113.

9 McCartney to Warren Hastings, 11 July 1781, BL. Add. 22454 f. 6.

10 George Paterson diary, July 1770, BL. IO. Mss. Eur. E379/1 p. 268.

1778-9, a force under Lieutenant-Colonel William Cockburn set out from Bombay to advance on Pune, the Maratha capital, only to fall back when faced by deteriorating circumstances in a situation made more worrying by the Maratha cavalry. Cockburn reported of "having the whole flower of the Maratha horse ready to charge whenever an opportunity offered, but our well served artillery and the steadiness of the infantry prevented them."[11] In India, unlike America, the British suffered from the greater mobility enjoyed by their opponents thanks to the role of their light cavalry. However, falling morale, desertions and ammunition shortages led Cockburn to sign an humiliating agreement at Wadgaon that provided for the withdrawal of the army to Bombay.

The British responded in part by support from Indian cavalry. In 1774 at Lahykira, the British benefited from the support of Oudh cavalry in defeating the Rohillas. In 1781, the Marathas maintained their superiority in cavalry in a new war with the British, although the British recruited Indian cavalry units.

Despite the deployment of cavalry units, there was a general European reliance on infantry. Near Seringapatam in 1792, one British participant involved in the defeat of the Mysore forces under Haider Ali's son, Tipu Sultan, recorded the attack on the latter:

> "The glittering of the swords in a bright sunshine, and the flashes of the firearms, on both sides, was grand and awful. Our cavalry soon found their overmatch and were obliged to give way in a masterly manner wheeling outwards to the right and left into the rear, by a signal from Colonel [John] Floyd, a moment when the Bengal [infantry] battalions came up between the two divisions and gave their fire, and perhaps saved the whole corps."

In a similar fashion, Napoleon's defeat of attacking Mamluk forces in Egypt in 1798 were victories for French defensive firepower over shock tactics.

Yet, in practice, war outside Europe was not defined by Western expansion, nor capability set by Western paradigms and methods, as most conflict was between non-Western forces. Indeed, on the global level, the idea of a cavalry versus infantry balance is not terribly helpful. Indeed, in so far as it is used, the prime use of cavalry was not in fighting Western forces, although that element existed and notably so in conflict between the Ottomans and Russia, but rather in non-Western forces fighting each other. In these cases, cavalry showed vitality, as well as expanding its sway.

11 Cockburn to Council of Bombay, 13 Feb. 1779, BL. IO. Mss. Eur. Orme 197, pp. 55-7.

The latter process was very much seen in North America and, on a far longer term basis, in the African *sahel*. Each was significant. In America, horses (like guns) had rapidly ceased to be a monopoly of the European invaders. The diffusion of both to the Native Americans led to changes in warmaking by the latter, changes that were operational as well as tactical. The arrival of the horse allowed the Natives to follow herds of bison or deer for hundreds of miles; and the resulting improvement in diet led to a larger and healthier population. Bison drives required much organization and planning, and served as a preparation for human conflict. This very much matched the Central Asian pattern of training for conflict by means of very large animal drives, which certainly provided a purposed horsemanship.

Native Americans living near Spanish settlements in the Southwest in the early seventeenth century had been the first to acquire horses, and their use spread northward, by trade and theft, to the Rocky Mountains and the Great Plains. The Apache and Comanche had the horse before the end of the seventeenth century, and the Cheyenne and Pawnee by 1755. In the eighteenth century, more horses were acquired from Europeans trading from the St Lawrence Valley. The combination of firearms and horses made the tribes of the Plains a formidable military challenge to each other and to Europeans.

Most notably, this combination forced the Spaniards to reconsider their military methods, as the Native tribes were able to respond with considerable flexibility to Spanish tactics, a process seen more generally across North America. Well-mounted and armed with Western firearms, tribes were able to resist attack, thwarting the Spanish expedition sent against them in 1775. Instead, to defend the northern frontier of New Spain in northern Mexico, the Spaniards relied on Cuera cavalry and on the *presidios* (forts) where they were based. With their deer-skin sleeveless leather cloaks and shields providing protection against Native arrows, the Cuera were a good example of adapting to conditions. They were recruited from allied Native Americans and from those of mixed-race background, were supposed to have six horses each, and were armed with carbines, pistols (or bows), and lances (or swords)

The use of cavalry in combination with outposts was a common response on 'wild' frontiers from settled societies. Not only forts, these outposts were part of an ideological, economic and demographic response in that they provided Catholic missions, trading posts and settlers. As such, cavalry was, for such states, part of a settled and settler method that was both defensive and expansionist, serving to define the frontier both territorially and in terms of the nature of activity.

Indeed, the characteristics of cavalry were particularly well-suited to zonal frontiers which, in practice, were the norm across much of the world. This, in practice, was another aspect of the range and mobility of cavalry and also of the extent to which it was suited to distance, for frontier zones were broad as well as deep, and also generally had a low population density. As such, cavalry as part of the geopolitics of frontiers, a geopolitics that is frequently mistaken by being understood in static terms.

From the 1780s, the Sioux, who, like their opponents, had firearms and horses, benefited from smallpox epidemics which weakened tribes such as the Crow, Pawnee and Shoshone, which had blocked their westward move from Minnesota. The large farming villages of rival tribes made them particularly vulnerable to smallpox. The Sioux also benefited from their combination of constant small raiding parties and occasional large war parties and the Sioux alliance showed an ability to hold their own different tribes together.[12] This is a reminder of the need to consider a multiplicity of factors when assessing capability, effectiveness and results.

Cavalry also continued important in parts of Africa, but with the same contrast as hitherto between different parts of this very extensive continent, the size of which is frequently under-estimated and often seriously so as in misleading simplistic aggregations of sub-Saharan warfare. In West Africa, cavalry played a major role. Thus, Dahomey was subjected to invasions by the cavalry of Oyo in a series of conflicts between 1726 and 1748. Although the cavalry could be held off by musketeers sheltering behind field fortifications, their mobility enabled them to pillage Dahomey and force it to surrender and pay tribute. Asante, which sought to expand further west, could not defeat the cavalry of the *sahel* and became reliant on winning allies who had their own cavalry. In the eastern *sahel*, states such as Sinnar, Darfur and Kordofan in modern Sudan, used their cavalry both to intimidate subjects and to defend them from foreign rulers, with Sinnar conquering Kordofan in 1755.[13]

For the *sahel*, it is possible to emphasize different conclusions. Thus, Babban Zaki, Sultan of Kano (r. 1768-76), was the first ruler there to arm the royal guard with muskets, but he also had a large force of cavalry with which he defeated opponents both foreign and internal. His contemporary, Emperor Iyas of Ethi-

12 R. White, 'The winning of the West: The expansion of the Western Sioux in the eighteenth and nineteenth centuries,' *Journal of American History*, 65 (1978), pp. 319-43.

13 J.J. Ewald, *Soldiers, Traders, and Slaves: State Formation and Economic Transformation in the Greater Nile Valley, 1700-1885* (1990), pp. 45-6.

opia was beaten at Azezo (1769), in part due to his cavalry being defeated by the musketeers of Ras Mika'el Gondar; only for the battle of Sabarkusa (1771) to show the significance of shock tactics. This underlines the extent to which, although they were important in Ethiopian warfare, firearms alone could not determine conflict. Moreover, individual battles should not be considered in isolation when assessing effectiveness.[14]

The use of cavalry remained very important in Asia, and also had great impact, notably in the overthrow of the Safavid dynasty in Persia (Iran) in the early 1720s, and in the expansion in India, first, of the Marathas and, then, of the Afghans. The crucial battle in the Safavid overthrow, Gulnabad (1722), saw both sides with plentiful cavalry, but the smaller Afghan force with better command and fighting skills. Persia was subsequently to be taken over by Nadir Kuli, a Turcoman tribesman, who was Shah from 1736 to 1747. Nadir's emphasis was on mobility. Cavalry charges against opponents' flanks were his characteristic tactic, and he deployed his cavalry as a shock force, rather than for firepower. Nadir's cavalry was more effective than that of Ottoman and Mughal rivals. In 1730, at the battle of Malayer Valley near Nahavand, Nadir launched a sudden attack by his right flank that enabled his forces to maintain their impetus after crossing the stream, always a difficult task, and to launch a powerful assault on the Ottoman left that eventually led to victory. As with many decisive cavalry battles, indeed battles as a whole, outside Europe, this one tends to be ignored; but it ensured that western Persia, an area in dispute for centuries, would remain outside the Ottoman sphere, and that the Ottoman government would lack the prestige and spoils of success.

By 1740, helped by the diversion of Ottoman attention by conflict with Austria and Russia in the late 1730s, Nadir had expanded Persian power further than any of the Safavids. He had defeated the Ottomans in battle more consistently than the Safavids ever managed, gained a victorious entry into India that the Safavids had not enjoyed, and subjugated Central Asian cities like Khiva, Bukhara and Samarkand that the Safavids had never reached.[15] Military progress therefore was certainly not a monopoly of Western states nor uni-directional. However, Nadir had less time than Peter the Great of Russia to consolidate his power and a weaker basis for state authority. This also proved a major con-

14 M.W. Aregay, 'A Reappraisal of the Impact of Firearms in the History of Warfare in Ethiopia, *c*.1500-1800,' *Journal of Ethiopian Studies*, 14 (1976-9), pp. 87-122.

15 M. Axworthy, *The Sword of Persia: Nader Shah, from Tribal Warrior to Conquering Tyrant* (2006).

trast to the Chinese expansion of the 1690s-1750s toward and into central Asia.

As before, it is possible to emphasize the extent to which it was difficult for certain types of rulers to establish a political control that lasted and notably rulers from the saddle. This was true of Nadir and also of the Marathas in India, but, in all cases, it is necessary to qualify sociological speculation by reference to the contingent complexities of competitive international situations and their interaction with domestic pressures.

The assassination of Nadir in 1747 was followed by divisions in his empire and by sustained conflict within it that included battles, such as Chamchamal (1754) and Urmiya (1757), in which betrayal was as important as military tactics.[16] The eastern part of the empire, most of modern Afghanistan, was taken over by Ahmad Shah Durrani (r. 1747-73), formerly a cavalry commander under Nadir, and a Pashtun tribal chief who founded the Durrani dynasty. In one respect, this was an instance of a more general process of tribal breakout in South-West Asia, one in which neighbouring states were invaded and the importance of tribal cavalry in the wider region increased.[17] Despite serious divisions between family members that repeatedly led to conflict, the Durrani empire lasted far longer than that of Nadir Shah.

Cavalry was important in Maratha and then Afghan expansion in India that helped ensure that Indian rulers put an emphasis on being able to oppose cavalry, notably by means of using cavalry. Compared to this, Western forces remained largely peripheral and can be treated accordingly, in that India and other powers should not be assessed in terms of how far and long it took to emulate Western methods. Moreover, European forces overseas faced the difficulties of transporting horses, of raising sufficient cavalry locally, and of providing fodder for the horses. In India, conflict with Mysore and the Marathas showed the continued effectiveness of cavalry and therefore the limitations of the British reliance on infantry. Instead, the British and French in India were largely dependent on allied forces for light cavalry, and this limited them politically, as allies had their own agenda. The role of such contingents has been minimized because of the emphasis on infantry trained to fight in the European fashion. There was no cavalry on this scale in the eighteenth century in India in the East India Company army, in part due to the difficulty of obtaining horses on the east coast, the cost approximately thrice that of infantry man for man, and difficulties encountered

16 M. Axworthy (ed.), *Crisis, Collapse, Militarism and Civil War. The History and Historiography of Eighteenth-Century Iran* (2018).

17 C.A. Bayly, 'India and West Asia, *c.* 1700-1830,' *Asian Affairs*, 19 (1988), pp. 3-19.

with Muslim horsemen. Yet, an unwillingness to train Indians in better cavalry tendencies was also important, as was the preference of London for a defensive stance, rather than the aggressive possibilities offered by cavalry.

The range and flexibility of cavalry could be increased by varying the type of cavalry used. This was to be seen from the 1660s in conflict between the Marathas and Mughals in western India, and then with Mughal successor states, notably Awadh, Bengal, the Carnatic and Hyderabad, all of which also employed heavy cavalry, armoured and wielding lances and swords. Maratha cavalry used small horses from the region, rather than the large, heavier horses imported from Central Asia that were the Mughal goal, not least because Maratha cavalry did not ride stirrup to stirrup in order to provide the shock and impact of their Mughal opponents. Instead, they relied on harassing the Mughals, staying out of the range of charges while weakening them by raiding tactics and the use of missiles. These tactics were matched by an operational preference for gaining logistical mastery by cutting the supply lines of opponents, and a related strategy of exhausting them by devastating territory rather than seeking battle, a method similar to that of the English in France in the 1350s during the Hundred Years' War.

The Marathas were able to hold off Mughal operations reliant on large infantry forces in what, due to the climate, were short campaigning seasons, in which such forces moved slowly. The last was a crucial point when campaigning in a region of this scale. The use by the Marathas of cavalry was also favoured by a tactical emphasis on irregular warfare with, in particular, the ambush of crucial supply convoys. Raids, moreover, led to scorched-earth tactics in order to make defensive positions untenable, as well as providing a display of power which was particularly important in seeking to maintain support and sow fear.[18] Cavalry was particularly important to this as also seen, for example, in the campaigning in the last stages of the Thirty Years' War of 1618-48 in Germany.

In 1740, the Marathas invaded the Carnatic in south-east India, defeating and killing the Nawab at the battle of Damalcherry, and then pressing on to capture Arcot, the capital. Alongside Nadir's victory over the Mughals at Karnal near Delhi in 1739, this campaign demonstrated the effectiveness of cavalry and the extent to which control of cities followed on from victory in battle. In 1741, the Marathas raided as far as Bengal. From 1745 to 1751, Orissa was raided every year, and the Carnatic between 1753 and 1757. Gujarat was taken over from 1752.

18 L. White, 'Strategic Geography and the Spanish Habsburg Monarchy's Failure to Recover Portugal, 1640-1668,' *JMH*, 71 (2007), pp. 373-409.

There were also victories in battle in which cavalry played a major role. The Nizam of Hyderabad was defeated heavily at Ugdir (1760). The value of the readily manoeuvrable Maratha cavalry continued to be seen when the army of the Nizam, attacked from front and rear at Koregaon (1761) was defeated anew, with fresh Hyderabadi defeats at Urali (1762) and Rakshasbhuvan (1763). Haidar Ali of Mysore was also defeated by the Marathas at Chinkurali (1771).

Meanwhile, the Afghans were pressing on northwest India. Ahmad Shah Durrani benefited from the established role of the interior of Asia in providing effective cavalry horses. The Durranis used cavalry armed with flintlocks, joining gunpowder firepower to the fluid tactics associated with Central Asian horse archers.[19] These tactics and weapons were to be emulated by Indian rulers, especially in northern India. Aggressive warfare became a major theme of Ahmad's reign, as in order to ensure support and stability, he sought to gain plunder for the Afghans and to find them occupation, producing much loot that helped the position of the tribal chiefs who provided contingents for the army. Repeating the Mughal axis of advance in the early sixteenth century, Ahmad Shah repeatedly and successfully attacked north-west India, a far more fertile and prosperous region than Afghanistan or its other neighbours.

Cavalry strategy was very much set by these goals. Ahmad Shah first invaded the Punjab in 1748, leading 30,000 cavalry across the Indus River in a quest for plunder and food. Near Manupur, the Afghans were opposed by a larger Mughal army which checked it with its firepower. An invasion in 1749 was more successful, while Afghan cavalry also campaigned on other fronts. Thus, to the west, Khurusan cavalry was defeated at Turbat-i-Shaykh-Jan (1750), which allowed Ahmad Shah to advance to and capture Mashhad, while in 1751-2, a fresh invasion of Punjab saw the Mughal army outmanoeuvred and the Mughals fell back to protect Lahore, which was then successfully besieged. In the winter of 1756-7, Lahore was seized anew by the Afghans, the Marathas defeated at Narela (1757), and nearby Delhi taken; with the process essentially repeated in 1759. It is unclear why these campaigns, in which cavalry played a major role, should be regarded as less significant than those in Europe in this period in which cavalry played a smaller role.

In a fresh campaign in the winter of 1760-1, Ahmad Shah outmanoeuvred the Marathas that winter by cutting their communications. The capacity for ma-

19 J.J. Gommans, *The Rise of the Indo-Afghan Empire, c. 1710-1780* (1995) and 'Indian Warfare and Afghan Innovation during the Eighteenth Century,' *Studies in History*, 11 (1995), pp. 261-80.

noeuvre was a key tactical and operational skill that was particularly important due to the vulnerability of supply links. The Marathas dug in at Panipat, but thus lost the mobility that was so important to their effectiveness. In the battle, the Afghans deployed heavy cavalry with body armour and muskets, while the Marathas failed to integrate their light cavalry with their infantry. Moreover, the Maratha cavalry proved undisciplined, and its advances were checked. In the event, the Afghan cavalry attacks, notably by a 5,000 strong reserve, delivered victory. Supported by *zanbüraks* (camel-guns) and Persian musketeers, the Afghans were victorious, breaking through the Maratha centre. They benefited not only from superior firepower, but also from the strength of their cavalry, which was heavier than its Maratha counterpart.[20]

Given such a background, it is unsurprising that the value of cavalry in India was something British commanders had to understand. Appointed Governor-General and Commander-in-Chief in British India, Charles, 2nd Earl Cornwallis stressed the value of mobility from the outset:

> 'no man in India can be more convinced than I am of the importance of cavalry to our armies.... I found, in the extensive field in which I acted during my command in the Southern Provinces of America, very great advantage from mounting about eighty or an hundred men on ordinary horses, to act with the cavalry; By this means I could venture to detach my cavalry and strike an unexpected blow at a very considerable distance from my army. It occurs to me, that in case of an invasion of the Carnatic, you might find a corps of this sort picked from your European infantry ... very useful. It would not only protect the cavalry when detached in their camp or quarters, and assist them when harassed by swarms of irregular horse in the field, but it would enable you frequently either by surprise at night, or ambuscade, to punish considerable parties or plunderers, who are employed in laying waste the country.'[21]

Cornwallis described the common practice of augmenting the cavalry with the extra firepower of mounted infantry. This practice arose in part from the poor quality of the cavalry pistols and carbines of the era, and was not really resolved until the major increase in cavalry firepower at the end of the nineteenth century. This situation further blurred the distinction between mounted and dismounted fighting by horsemen, a distinction that was far from fixed across time and space.

20 H.R. Gupta (ed.), *Marathas and Panipat* (1961).

21 Cornwallis to Campbell, 7 Jan., 11 Oct. 1787, NA. (London, National Archives) PRO. 30/11/159 f. 23, 83-4.

Cavalry was also important to the Chinese struggle with the Zhungars from the 1680s to the 1750s, a struggle in which the strengths and limitations of cavalry were revealed, and at the operational and tactical levels. The Chinese campaigns into Central Asia in the 1750s benefited from eastern Mongol allies who provided the horses and plentiful fodder, each crucial to operating on the steppe. Thus, the Chinese had been unable to mount an effective pursuit after their victory at Ulan Butong (1690), in part because their horses were exhausted; although, because the Manchu Chinese could draw on a steppe cavalry tradition, there was no comparison with the Ming failure against the Mongols in 1449. Indeed, the Manchu conquest in the mid-seventeenth century had infused the Chinese military with a new dynamic and a greater ability to operate successfully in the steppe, cavalry playing a large role in an army that, in effect, was a Manchu-Chinese hybrid.[22] This army continued to use bows as mounted archers.

The Zunghars used their cavalry forces to mount significant responses, as in 1717 when they invaded Tibet. The advisers of Lajang Khan, a Mongol and Chinese protégé, who had seized control there in 1706, were divided over the best way to respond. Aka Taiji recommended fighting on an open plain, while P'o-lha-nas suggested taking up a strong defensive position, the tactic that had been adopted by the Zhungars at Jao Modo (1696), only to be defeated there by the Chinese. These approaches reflected different preferences for cavalry warfare. In the event, Lajang's army remained in the pastures that fed his animals, being defeated there in battles that saw both firepower and close-quarter fighting, especially with swords and knives.[23]

In contrast, Chinese defeats by the Zunghars in 1731 captured the continued vitality of steppe forces. At Hoton Nor, a force that had advanced into Xinjiang was lured into a trap and nearly destroyed with the loss of many thousands of troops. Another army that marched on Urumchi avoided destruction but retired. In turn, the Zunghars invaded the territory of the pro-Chinese Khalka Mongols, only to meet a successful resistance, in which the crossing points of rivers were held, and the Zunghars defeated at Erdene (1732). The Zunghars were more successful in advancing into Kazakhstan and Turkestan in 1723-5.

More generally, differing understandings of victory were to the fore, notably differences about what was seen as most important and viable. The tactical and operational aspects of cavalry warfare on the steppe, which included raiding to secure the horses of real or potential opponents, had profound effects on the

22 P.C. Perdue, *China Marches West: The Qing Conquest of Central Eurasia* (2005).

23 L. Petech, *China and Tibet in the Early Eighteenth Century* (1950), pp. 32-73.

strategic understanding of what constituted victory. Conditions were extremely fluid, the enemy could always ride away, there were few strongholds to capture; and therefore it was difficult to impose a sense of victory, and hard for those opposing steppe forces to control the situation.

The situation was different in Europe where positional warfare was far more common. Technological change was also significant. The shift from matchlock to flintlock firing mechanisms increased the reliability of muskets as ignition systems, especially in damp weather and in the wind, and also increased the ability to rely on firearms to offer strong protection against cavalry attack. Yet, cavalry could play a crucial role, as with the British victory over the French at Blenheim (1704) and the Prussian over the French at Rossbach (1757); as well as at a range of other battles, including Hohenfriedberg (1745), Soor (1745), Kunersdorf (1759) and Warburg (1760); and cavalry-infantry coordination, or at least combination, could be important.

At Blenheim, the cavalry was used to break through the French centre after their reserves had been pinned down in flank positions. At first, the British cavalry attack in the centre was checked by the French, but British infantry and artillery support blocked the advance of the French cavalry, and it was then unable to resist the second British cavalry attack. This led to the rout of the French cavalry and to the breakdown of the French position. The British had proved more successful than their opponents in integrating cavalry and infantry. The same technique worked against the French at Ramillies (1706). At Oudenaarde (1708), the French position was nearly enveloped when John, 1st Duke of Marlborough sent his cavalry around the French flank and into their rear.

More generally, cavalry skill proved cumulative both in the development of particular cavalry forces and in cavalry-infantry coordination. At Klisów (1702), the Swedes defeated a larger Saxon army by attacking, both cavalry and infantry doing so rather than engaging in a preliminary firefight. The use of cavalry as a shock force was similar to that by Marlborough, but with an even greater emphasis on the shock attack. As with Marlborough, combined arms was necessary. At Punitz (1704), repeated attacks by Swedish cavalry on a huge Saxon square failed, allowing the Saxons to retire from Poland. Lacking infantry and artillery support, the Swedes, under the personal command of Charles XII, had been unable to break the solid infantry formation. At Fraustadt (1706), a Swedish army defeated a Saxon force twice its size, the numerous Swedish cavalry enveloping both Saxon flanks, while the relatively small Swedish infantry-force broke through the Saxon centre. The Saxon cavalry was forbidden from using pistols after 1706, the emphasis instead being a shock attack.

At Poltava in 1709, the key battle in the Great Northern War of 1700-21, the Swedish infantry was unable to repeat the success of their cavalry in pushing back some of that of the Russians. Yet, the infantry faced a more difficult task in assaulting the Russian redoubts. In part, they were defended by dismounted dragoons. Later, mounted, they acted as cavalry in attacking the Swedish infantry. In what was a complex battle, Russian infantry had been able to thwart Swedish cavalry attack by forming squares.

In the eighteenth century, although absolute numbers did not really decline, the proportion of cavalry in Western armies declined because their overall size increased. This change cut the average cost of soldiers, as cavalry was roughly three times as expensive. Aside from the cost, part of the problem was the provision of sufficient horses, as some Western European states had to import horses from Eastern Europe.

Cavalry was principally used on the battlefield to fight cavalry, so that, if your enemy reduced their cavalry in absolute or relative terms, you, in turn, required less. Cavalry advances against unbroken infantry were uncommon, and the latter were more vulnerable to artillery. So also was cavalry. Indeed, the development of artillery both light enough to be used on the battlefield but also with effective ranges of about 1,000 metres, made cavalry charges and manoeuvre on the battlefield more vulnerable.

Meanwhile, the use of sleeve bayonets had made infantry stronger against cavalry attack. French cavalry charges on the British infantry at Fontenoy (1745) were stopped by musket fire before they could reach the British lines, while, more seriously, the French infantry, which held a defensive position, was able to block the British infantry advance. Cornet Philip Brown of the 1st or King's Own Regiment of Horse of the British cavalry, wrote that afternoon:

> 'We wish for nothing more than that the enemy would advance from behind their batteries and if they should my life upon it we should destroy them all. I admire and adore that kind Providence who hath been my great Protector and Preserver of my life and limbs driving such a cannonading of nine hours, as could not possibly be exceeded…. There were batteries continually playing upon our front and both flanks at the same time during the whole attack which was made by the infantry and they supported by the cavalry.'

Brown continued with a personal reflection that reflected the familial dimensions of wartime cavalry service:

> 'We are now part of the body of force which is posted as the rear guard to cover the retreat of the whole army, so that it is very uncertain whether

> I may yet live to see out the day or the sun rising the next morning should the enemy determine to harass us in our retreat – it was a great pleasure to me that my commission was not signed when we marched to the battle to think that if I fell the money deposited would be preserved to my dear relations and friends.'[24]

Looked at differently, the cavalry, deployed to the rear of William, Duke of Cumberland's great column of advance, were largely spectators at Fontenoy. The Duke's handling of his cavalry has been criticized.[25] It certainly reflected a reliance not on manoeuvre, but on force, one that was thwarted by a strong defence. Yet, on this battlefield, as on many others, there was no real room for a large flanking movement, still less one of envelopment.

Very differently, the Scottish Highlanders in the Jacobite army achieved considerable success against British regular cavalry in the rising of 1745-6. At Prestonpans (1745), the opening battle, the Jacobites had only forty horsemen whereas the British army had numerous dragoons. Unaccustomed to being attacked by infantry, most of the dragoons refused to charge, and those who attempted to do so were met by Highlanders slashing at their mounts. Robert Craigie, the Lord Advocate, reported:

> 'The officers in the general condemn the soldiers and in a particular manner the dragoons who they say did not strike one blow before they fled and neither they nor the foot could be prevailed upon to rally. We think this accounts for the defeat without any other reason either the attacks being early in the morning or the bravery or number of the Highlanders. One thing is certain that this defeat will make it a dangerous experiment for His Majesty's troops to engage the rebels a second time without a visible superiority. This has raised their contempt of the regular troops.'[26]

At Clifton, in December 1745, the second battle, a successful Highland charge led to the repulse of troops pressing the Jacobite rearguard. The firepower of Bland's dragoons proved unable to protect them from the claymores of the MacPhersons, who had only 150 yards to run and that covered by a dark and cloudy night. Unable to face the hand-to-hand fighting, the dragoons retreated after about two minutes. Welbore Ellis, a pro-government MP, had suggested that it would be difficult for the Duke of Cumberland to defeat the Jacobites: 'if

24 Brown to Richard Andrews, 30 Ap. 1745, Aylesbury, Buckinghamshire CRO., D/X 1069/2/116.

25 F.H. Skrine, *Fontenoy and Great Britain's share in the War of the Austrian Succession* (1906), pp. 197-8.

26 NA. SP. (State Papers) 54/26 f 102.

the country be so inclosed as I have heard it described, he can do nothing with his horse, but may be destroyed if they know how to avail themselves of the hedges.'[27] In the event, it was not an inability to charge that was crucial, but a general loss of dynamic, one to which inadequate firepower contributed.

The Jacobites also stopped the British cavalry at Falkirk in 1746: they outnumbered them and, moreover, fired a devastating volley which disordered the cavalry. Thereafter, the clansmen drew their swords, charged, and then hacked at the horses' legs.

As a result of this defeat, Cumberland, marching north, drew up a new order of battle: 'I put all the cavalry in the third line, because the rebels by all accounts don't fire them as they do our fire, and on that I depend.'[28]

The British did not rely on their cavalry at Culloden (1746), the last battle, one largely won by their defensive firepower. The Jacobite order of battle included 176 cavalry, not a significant number; while Cumberland used his far more numerous dragoons, who were positioned forward on a flank, to provide supporting firepower, and they and the cavalry harried the Jacobite retreat, inflicting significant casualties in killing and captures. A Jacobite officer recorded 'our right wing was flanked and surrounded by the horse which did great execution.'[29] The harrying made it impossible for the Jacobites to retreat as an unbroken force.

In the more conventional campaigning of mid-century Europe, Prussian campaigning put a heavy emphasis on infantry. This was notably so at Mollwitz (1741) where it overcame the consequences of the defeat of the Prussian cavalry by the more numerous Austrians who rode them down. There was no one approach to cavalry tactics. Under Frederick William I (r. 1713-40), offensive, shock cavalry tactics were neglected, and the cavalry, instead, relied on pistol fire. Frederick the Great (r. 1740-86) reformed the arm, and cavalry instructions issued in 1745 required shock attack in full force, including the troops yelling.

Cavalry came to be important in certain Prussian victories. This was especially so at Rossbach (1757), in the Seven Years' War (1756-63), in which Prussia fought Austria, France and Russia. The Prussians attacked their larger, but

27 Ellis to Lord Hartington, 12 Dec. 1745, Chatsworth MSS, transcripts held by History of Parliament Trust, London.

28 Cumberland to Thomas, Duke of Newcastle, 30 Jan. 1746, Windsor Castle, Royal Archives, Cumberland Papers 10/28.

29 I.G. Brown and H. Cheape (eds), *Witness to Rebellion. John Maclean's journal of the 'Forty-Five and the Penicuik drawings* (1996), p. 37.

Fig. 2. Battle of Rossbach, Detail. Oil on canvas, Weissenfels Museum in Neu-Augustusburg Castle, V-2173 K 2. Uploaded to Wikipedia Commons by James Steakley from *Friederisiko. Friedrich der Große. Die Ausstellung*, ed. Generaldirektion der Stiftung Preußische Schlösser und Gärten Berlin-Brandenburg (Munich: Hirmer, 2012), p. 143.

slower-moving, French opponents on the march; screening their advance behind a hill so as to provide an instance of an ambush. After hard fighting, Major-General Seydlitz defeated the opposing cavalry of the French advance guard, which demoralized the French infantry. A second charge from Sedylitz completed their collapse and the French fled in confusion. At Leuthen (1757), the Prussian infantry became exposed to the Austrian cavalry, but the latter was checked by the prompt action of the Prussian cavalry. Against the Russians at Zorndorf (1758), the Prussians were helped by useful cavalry charges.

The British were allied with Prussia but only against France and sent troops to Germany in 1758. At Minden (1759), their first battle, British infantry, advancing across an open plain, repulsed two charges by French cavalry. Most of the cavalry casualties were caused by musket fire, but those who reached the British lines were bayoneted. Another French cavalry attack concentrated on the flanks and rear of the British infantry, only to find the rear ranks turn about and fire their deadly muskets. Again the French charged home, but relatively few reached the British lines and they were stopped by the British bayonets. However, the British cavalry failed to cement the victory by charging, which led to the court-martial of its commander, Major-General Lord Sackville.

His replacement, wo like Sackville was also the son of a duke, Lieutenant-General John Manners, Marquis of Granby, was a prime representative of the sporting tradition of British generalship. He had a more successful war than Sackville, acquiring a reputation for boldness, bravery and success. Gran-

by's leadership of a cavalry charge on the French flank was decisive in the defeat of the French cavalry at Warburg (1760). He was expert at coordinating infantry, cavalry and artillery, and outmanoeuvred the French on a number of occasions. From Marlborough through to Wellington, foreign commentators frequently mentioned the high quality of British cavalry horses, together with their saddlery and tack, and also the care taken of them. These were seen as evidence of the wealth of the British state in providing such horses.

Horse artillery was not itself cavalry but an aspect of it, and, as Thomas, Lord Pelham, Home Secretary from 1801 to 1803, noted, needed to be protected by cavalry. His analysis of the horse artillery reflected the need to maintain horses well:

> 'Our ill judged economy in these matters makes us trust to contracts to supply horses which when called for are never fit for service, kept at grass or in straw yards for the sake of a little saving in their food, and unused to the collar, their shoulders soon gall, they will not draw, and forced by unskilled drivers are soon knocked up.'[30]

British operations in Germany led to the publication of *Military Equitation, or A Method of Breaking Horses and Teaching Soldiers to Ride* (1761). The author, Henry, 10th Earl of Pembroke, who served in Germany from 1760, eventually becoming the commander of a cavalry brigade, sought to provide disciplined drills for cavalrymen. New editions came out in 1762, 1778 and 1793. A French equivalent, by a cavalry veteran, was Louis Drummond de Melfort's *Traité sur la Cavalerie* (1776).

It was also necessary to provide horses fit for purpose. Arriving in Britain in 1714, the future George II pressed for an improvement in the breeding and training of horses for cavalry, as opposed to hunting, which was the major concern of the aristocracy.[31] Napoleon was similarly anxious to improve the quality of the French cavalry.

In European conflict, much depended on the nature of the terrain and cover, with cavalry of limited value in hilly terrain and the enclosed countryside that was becoming more prominent. Thus, due to the many hedges on the battlefield, Roucoux (1746) was very much an infantry battle. In contrast, at nearby Laufeldt the following year, French and British cavalry charges played a key role in the struggle to turn or protect the Allied left.

30 Lord Pelham, undated memorandum, BL. Add. 33120 f. 162.

31 Iberville, French envoy in London, to Torcy, French Foreign Minister, 25 Dec. 1714, Paris, Archives des Affaires Étrangeres, Correspondence Politique, Angleterre, 260, f. 282.

Supplies were a key element in the use of cavalry, Field Marshal George Wade noting of the proposal to advance to Mons made at an Allied Council of War in the Austrian Netherlands [modern Belgium] in 1744:

> 'several objections arising, how we should be able to subsist so large a body of horse on dry forage, the small magazines at Mons being insufficient and liable to be intercepted by the superior force of the enemy, and we obliged to retreat.'[32]

Later that summer, he reported:

> 'the great body of horse has destroyed all the hay within 36 miles of our camp, and there are no oats to be had nearer than from Holland. Indeed our subsisting hitherto on dry forage has been of great service; for had we began sooner or later on green forage, we could not have stayed on the banks of the Scheldt to guard that river, and Ghent would probably have been lost, if we had left our present situation.'[33]

The high level of conflict involving Persia and Afghanistan in the closing decades of the century indicated the continued role of cavalry. In India in 1761, at the third battle of Panipat, the largest battle in the world that century, the Afghan cavalry reserve helped determine the battle, breaking through the Maratha centre. The continued role of the Afghans in north-west India until the end of the century provided a clear demonstration of the significance of cavalry, and calls into question accounts of military progress in India (and more widely) focused on the rise of infantry. Far from cavalry proving anachronistic, it continued to offer tactical, operational and strategic capabilities, not least in wide open spaces. Moreover, cavalry could be multi-functional. Thus, the Prussian cavalry and that of Brunswick used dragoons and hussars variously as heavy and light cavalry.

There were naturally mixed signals. In 1787, an Ethiopian army equipped with cannon and muskets was defeated by the cavalry of the Yejĵu Oromo at Amed Ber. In contrast, four years earlier, the Nogais in the Kuban, to the east of the Black Sea, were defeated at Urai-Ilgasi and the River Laba by a small, disciplined Russian force. In India, Mahadji Shinde, a key Maratha leader who trained his infantry and artillery along Western lines in order to complement the traditional Maratha cavalry, benefited greatly from the former in conflict in the 1780s. At Laslot (1787), his cannon and infantry routed a far larger body of

32 Wade to Carteret, 2 May 1744, Bod. MS. Eng. Hist. c. 314 f. 6.

33 *Ibid.*, 15 July 1744, f. 25.

Rajput cavalry which foolishly attacked the defensive square without preparatory fire. The following year, outside Agra, the cavalry charges of Ismail Baig, a Mughal noble opposed to Mahadji, were similarly defeated, although, in an echo of Robert Clive's victory at Plassey in 1757, he was also affected by the deserting of a key supporter bribed by Mahadji In 1790, there were largely infantry victories over Rajput cavalry at Patun and Merta and Rajput opposition came to an end. The Rajputs had not significantly changed their means of fighting and remained focused on heroism and frontal attacks.

Gibbon had presented a defensive capability that Europe now had, but, in practice, as the overrunning of the Crimean khanate, completed in 1783, was to show, this was now an offensive one. The steppe was being closed, a process that hitherto had not been achieved. It, however, was not simply a matter of European success. Instead, there was a wider process, one in which the Manchu advances into Central Asia from the 1690s to the 1750s played a crucial role. Moreover, the 'closing' of the steppe depends in part on a definition of the latter. Had it included Afghanistan, then the invasions of Persia in the 1710s-20s and of northern India by the Afghans from the 1750s scarcely suggests such a closure. Indeed, in many respects, it was not to be achieved until the late nineteenth century; and then by China as well as Russia and Britain – India. In the meanwhile, and more generally, cavalry remained important in war.

At the same time, its value has to be understood in the multiple contexts of conflict. Thus, in 1737, writing about the Austro-Turkish conflict in what is now northern Serbia, a British diplomat observed:

> 'the Emperor's army under Count Seckendorf is in a very bad condition, especially the cavalry; having lost, for want of forage, or through sickness and fatigue, the greatest part of their horses.'[34]

This was an aspect of the frictions of war, frictions that were particularly apparent for cavalry as the maintenance and retention issues were more complex than for infantry. As with so much else involving cavalry, this looked toward the later situation affecting armour.

34 Horatio Walpole, envoy in The Hague, to William, Lord Harrington, Secretary of State for the Northern Department, 1 Oct. 1737, NA. SP. 84/368 f. 2.

Voltaire's Scythed Chariots

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Falciferos memorant currus abscindere membra ...
Ut tremere in terra videatur ab artubos id quod
Decidit abscissum; quum mens tamen atque hominis vis,
Mobilitate mali, non quit sentite dolorem

Lucretius, *De rerum natura*, III, 642[1]

By Virgilio Ilari

Abstract. However bizarre, Voltaire's idea that Persian scythed chariots could be useful in modern warfare belongs to the literary tradition, inspired by Machiavelli's *Art of War*, of basing modern military revolutions on the authority of the Greek, Roman and Byzantine historians and military writers. In 1756 the French military (as then the Russians in 1769) did not consider Voltaire's proposal, but in 1769 they tested the first steam-carried artillery. To be successful, however, was the horse artillery, created in 1759 by Frederick the Great and employed in the Napoleonic and American Civil Wars. Still in use in the Boer War, since 1916 the horse artillery was replaced by tanks and self-propelled artillery. But in some way, the famous *tachanka* of the Russian Civil War paid an unwitting homage to the idea rejected by the Great Catherine's generals.

* * *

Welcoming in verse the publication of Guibert's *Tactics* (1774) Voltaire claimed that the author's arguments had convinced him that war, although evil, was nevertheless necessary and "the first of the arts" (*La Tactique et autres pièces fugitives*, Geneva, 1774). Yet Voltaire twice attempted to make a personal contribution to the 'devilish' art of war by reinventing Persian scythed chariots. The first to mention it was, in 1918, an Austrian Jesuit[2], followed in

1 "It is said that the scythed chariots cut the limbs so that the truncated limbs can be seen throbbing on the ground. And yet the soul of the stricken, because of the rapidity of the blow, cannot yet feel the pain." Quoted in Montaigne, *Essais*, II, vi (éd. Louandre, 1854, II, p. 155).

2 Robert Graf von Nostitz-Rieneck (1856-1928), "Voltaire und Tank," *Stimmer der Zeit*, 1918.

March 1920 by the *Mercure de France,* which extolled the patriotism of Voltaire, enemy of the *boches* and 'inventor' of the tanks[3]. An argument later taken up by a keen Alsatian strategist in the 1934 *Revue d'artillerie*[4]. Actually, the conceptual ancestors of the Great War tanks are, if anything, the self-propelled covered batteries such as those designed by Leonardo da Vinci (1482) or Berthold Holzschuher (1558), not to mention the earlier "war carts" recalled by J. F. K. Fuller in his 1920 essay[5] ; certainly not the ancient scythed chariots exhumed by Voltaire, who did not even consider the early contemporary projects of steam-powered artillery train (as Fuller himself observed in a 1940 note[6]).

The idea of adapting armaments and tactics of the ancient world to modern use is one of the characteristic aspects of what Geoffrey Parker called in 1956 the "military revolution" of the 16th-17th century, but it also came up again, especially in France, in the second half of the Eighteenth century[7]. Military modernization through the *restitutio* of Greek and Roman institutions gave *savants* the authority to speak out on military-technical issues, and it is in this context that Voltaire's proposal to exhume Assyrian and Persian scythed chariots should be framed.

Voltaire himself summarizes it – backdating it to 1741not mentioning himself and with a sarcastic tone – in the article "Barac et Débora" in his *Dictionnaire Philosophique* [8] :

> " During the war of 1741, it was proposed to renew and rectify this old invention. A minister of state had one of these chariots built and tested. It

3 J. Cazes, "Voltaire inventeur des tanks," *Mercure de France*, 1er mars 1920, No. 138/521, pp. 405-414.

4 Gabriel Hemerdinger, "Voltaire et son chariot de guerre. 1756-1757, 1769-1770, d'après sa correspondance," *Revue d'artillerie*, 57, 1934, pp. 597-607 [tirage à part Berger-Levrault, Paris, 1935: courtesy of Bruno Pauvert and Thierry Simon].

5 J. F. G. Fuller, *Tanks in the Great War, 1914-1918*, E. P. Dutton and Co., New York, 1920, pp. 4-12, where he quotes H. H. Manchester, "The Forerunner of tanks," *The American Mechanist,* vol. 49, No. 15. Previous to Leonardo's chariots are those depicted in the manuscripts of Conrad Kyeser (1395-1405), Giovanni Fontana (1420), Archinger von Seinsheim (1421), Roberto Valturio (1472), and the Scottish war cart attested in 1456 (although the relevant illustration given in Fuller is a seventeenth- century conjecture).

6 v. J.F.G. Fuller, "Voltaire's Tank," *The Spectator*, October 3rd, 1940, pp. 8-9.

7 V. Ilari, "Imitatio, restitutio, utopia: la storia militare antica nel pensiero strategico moderno," in Marta Sordi (ed.), *War and Law in the Greek and Roman World,* Milan, Vita e Pensiero, 2002, pp. 269-381.

8 Ch. Lahure (cur.), *Oeuvres complètes de Voltaire*, 5e éd., Hachette, Paris, 1860, T. XII, pp. 413-414.

> was claimed that, on large plains such as those of Lützen, they could be used to advantage by hiding them behind the cavalry, whose squadrons would open up to let them pass and then follow them. The generals judged that such a manoeuvre would be useless, and even dangerous, at a time when only the cannon can win battles. It was replied that there would be as many cannons in the army with war chariots to protect them as there would be in the enemy army to smash them. It was added that the chariots would first be sheltered behind the battalions or squadrons, that these would open up to allow the chariots to run on enemy, and this unexpected attack could have a prodigious effect. The generals did not object to these reasons, but they did not want to play this new Persian game. "

In 1989 Andrea Giardina dismissed Albert Lortholary's over-researched hypothesis that Voltaire's interest in chariots had been sparked by the cumbersome chapter *Des coches* in Montaigne's *Essais*[9]. It is easier to look for the key in Voltaire's criticism of the reliability of Sesostri III's purported 27,000 war chariots, which recurs in the *Essai* of 1756 and is then reproduced in later works[10] .

9 Albert Lortholary (1899-1975), *Les 'philosophes' du XVIIIe siècle et la Russie. Le mirage russe en France au XVIIIe siècle*, Éditions contemporaines, 1951, pp. 128, 333 nt. 98, 397 (cited in Andrea Giardina, *Le cose della guerra* [An. *de rebus bellicis*], Fondazione Lorenzo Valla, Milan, 1989, p. xii nt. 1). Michel de Montaigne, *Essais*, l. III, ch. VI éd. Louandre, III, 1862, p. 488. See also the Swedish Johannes Schefferus (1621-1679), *De re vehiculari veterum libri duo*, Francofurti, ex Officina Zunneriana, Typis Johannis Andreae, 1676, II, xv (pp. 184 ff.).

10 *Essai sul les mœurs et l'esprit des nations* (1756), Introduction, XIX, de l'Egypte ; *Défense de mon oncle* (1767), II ; *Fragmens sur l'histoire générale* (1773), X De la philosophie de l'histoire ; *Un Chrétien contre six juifs* (1776), VIII Niaiserie sur l'Egypte. In the *Essai* Voltaire also mentions Chinese chariots: «In the third book of Confucius, we find a peculiarity that shows how ancient is the use of armed chariots is. In his time, the viceroys, or provincial governors, were obliged to provide the Head of state, or emperor, with a thousand war chariots with four-horses abreast, a thousand quadriges. Homer, who flourished long before the Chinese philosopher, never speaks of anything but two- or three-horse chariots. The Chinese had undoubtedly begun to use quadriges, but neither the ancient Greeks, at the time of the Trojan War, nor the Chinese made any use of simple cavalry. However, it seems incontestable that the method of fighting on horseback preceded that of using chariots. It is recorded that the Pharaohs of Egypt had cavalry, but they also used war chariots: however, it is to be believed that in a country as muddy as Egypt and criss-crossed by so many canals, the number of horses was always very poor». Detailed information on the various types (at least five) and employment of Chinese war chariots was available in Europe as early as 1771 (first edition of *Art militaire des chinois*, edited by the Jesuit mission led by père Amiot). This was followed in 1773 by the *Etat actuel de l'art et de la science militaire à la Chine* (by Chevalier de Saint-Leu and Marshal de Puységur) and in 1782 by the second edition of the military classics (as vol. VII).

Moreover, the *Correspondance* of 1756-57 allows us to reconstruct the genesis of the project. According to the version given by the philosopher himself in three letters dated Nov. 1, 1756 and June 28 and July 2, 1757[11] to Marshal Duke de Richelieu[12], at the origin would have been the bizarre rumour that "the King of Prussia is currently mixing the pikes of the Macedonian phalanx with his cavalry." Speaking of this with the "*marquis*" Florian[13], who had come to visit him at the Parc des Délices in Geneva, Voltaire is said to have remarked, quite incidentally, that the ancient war chariots were a machine "much safer, much more formidable." Florian is said to have "took the whole thing seriously," asking him for a sketch [Voltaire calls it now *modèle* now *dessein*] of his "little secret," his "little amusement," to be submitted to the new minister of war, Marquis de Paulmy[14] along with a model built by Florian and Étienne Mignot de Montigny[15], a cousin of Mme Fontaine and a member of the Académie des Sciences[16] .

Voltaire quoted the opinions of Florian himself and another "excellent officer who is dying," according to whom with just "six hundred men and six hundred horses" (i.e., 300 chariots) 10,000 enemies could be routed, and no less than 50 "very well towed" cannons would be needed to stop them. But nothing removed from his mind that not even a hundred thousand Romans or a hundred thousand Prussians could have resisted. If anything, the trouble was that his "machine is only good for one campaign, since a known secret becomes useless." But he seriously believed that there was no other resource against the victorious Prussian Vandals.

The savant wrote about it to "*mon héros*" the Duke of Richelieu – the French Alcibiades, the dissolute, semi-literate, charming conspirator saved by women,

11 *Oeuvres complètes de Voltaire: Correspondance*, édition de Charles Lahure, Hachette, Paris, 1861, T. XXVII, N. 2416 (Nov. 1er , p. 513); T. XXVIII, N. 2499 (28 juin, p. 37) ; 2503 (2 juillet, p. 41). See also N. 2509 (19 juillet, pp. 44-45) and N. 2523 (21 auguste, p. 54).

12 Louis François Armand de Vignerot du Plessis de Richelieu (1696-1788).

13 Philippe-Antoine de Claris de Florian (1707-1778), secretary-convivor and later husband (1762) of Voltaire's niece, Madame de Fontaine (Marie-Elisabeth Mignot, 1715-1771).

14 Along with Voltaire's unsuccessful request to be elected to the Académie des Inscriptions, see note by editor Jean Clogenson (1785-1876).

15 Étienne Mignot de Montigny (1714-1782). The Marquis de Paulmy (1722-1787) had succeeded his uncle Count d'Argenson (1694-1764) in February 1757, who had been torpedoed by Mme de Pompadour because he opposed the alliance with Austria; in February 1757 d'Argenson was replaced by his nephew.

16 Hemerdinger, *cit*. interprets this interest of Florian as evidence of his active role in the matter. It would have been he who suggested that Voltaire plead the proposal with Richelieu and then with Catherine II.

the hero of Fontenoy and Mahon, the gourmet of *Bordeaux* and *mayonnaise* – because he considered him the right man to best employ his "invention," making "cannon fodder" of the Prussians. And especially because he thought him Gascon enough to overrule the minister by having a test done on his own initiative: "try, just to see, barely a couple of these machines against a battalion or a squadron. I pledge my life that they will not keep." As for himself, the philosophe adorned his warrior genius with virginal blush:

> "it will be enough to choke with laughter that it is me who is the author of this destructive machine"[17] ; "I know very well that it is not for me to get involved in the most convenient way of killing men. I confess myself to be ridiculous: but finally, if a monk, with coal, sulphur and saltpeter, has changed the art of war, in all this ugly globe, why could not a scribbler like me be able to render *incognito* some little service? "[18] ; "Who! that I should give myself and my hero the ridicule of talking about things that are not my business!"[19] ; "My hero, it is for you to judge murderous machines, and it is not for me to talk about them"[20] ; "I am ashamed, as a peaceful dabbler, to think of machines of destruction: but it is to defend the honest people who shoot badly, against the bad people who shoot too well"[21] ; "but it is too much to talk about destructive machines for a *pédant* such as I have the honour to be"[22] .

Almost a century ago, Jean Cazes assured that he had not found any reference to Voltaire's chariots in the French war archives, inferring that the proposal had not even been considered[23]. However, it had at least been discussed: indeed, Florian had heard that it had reached the ear of Marshal d'Estrées[24], and not because

17 *Corr.*, Lahure, XXVII, No. 2416, p. 513.

18 *Corr.*, Lahure, XXVIII, No. 2499, p. 37.

19 *Corr.*, Lahure, XXVIII, No. 2503, p. 41.

20 *Corr.*, Lahure, XXVIII, No. 2509, pp. 44-45.

21 *Corr.*, Lahure, XXVIII, No. 2489, p. 30.

22 *Corr.*, Lahure, XXVIII, No. 2494, p. 33. Other details emerge from seven other letters addressed between January 10 and December 10 to his niece and to Florian, called by celia "surintendant" or "capitaine" "of Cyrus' chariots" [*Corr.*, Lahure, T. XXVIII, à Madame de Fontaine ou à Florian, N. 4272 (6 mars 1757, p. 19); N. 2489 (mai 1757, p. 30); N. 2494 (31 mai, p. 33); N. 2500 (juin, p. 38); N. 2508 (18 juillet, p. 44) ; N. 2580 (10 décembre, p. 98) ; N. 2606 (10 janvier 1758, p. 118) : N. 2829 (26 mai 1759, p. 277). Still in 1770, Voltaire called Florian "Cyrus' grand esquire." [Lahure, T. XXXIII, No. 5807 (Mar. 21, p. 144) ; No. 5917 (Aug. 3, p. 225).]

23 J. Cazes, *op. cit.* pp. 409-10.

24 Louis Charles César Le Tellier, 1695-1771.

of Voltaire's initiative[25]. The philosopher was polemicizing against d'Argenson's conservative obtuseness: " anything new puts off the ministry".[26] There was no longer, *alas*, a Maurice of Saxony[27] : "you can be sure that the Marshal de Saxe would have used our war chariots"[28] . He wrote that he cared more for his invention than for the tragedy *Fanime*[29], performed in spring at his small theatre in Montriond. The ups and downs of war fueled hopes and disappointments: ah!, if only there had been my chariots![30] Behold, their time has come! Nope, they are winning even without them, damn them! [31] Yet the wagon was super-cheap and without any inconvenience whatsoever:

> "It costs almost nothing; you need few men, few horses; ill success cannot disrupt a line, and if the enemy cannon smashed all your chariots, which is very difficult, what would happen? They would serve as a bulwark, they would hinder the enemy's march towards you. In short, this machine can do a lot of good and can do no harm: je le regarde, après l'invention de la poudre, comme l'instrument le plus sûr de la victoire"[32] .

Here Berthold Schwarz's emulation is indirectly retorting to the easy objection that he did not take enemy firepower into account. And in fact, in those very days of May he takes care to perfect his model by writing to Florian to add a pathetic "small chest, with half a dozen double grenades."[33] Finally on July 19, evidently in response to a flat denial from Richelieu, the philosopher is forced to throw in the towel:

> "since the victor at Mahon refers my machine to the ancient kings of Assyria, we need only place it with Folard's column in the Babylonian archives."[34]

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25 *Corr.*, Lahure, No. 2494, p. 33.

26 *Corr.*, Lahure, No. 2472, p. 19.

27 Maurice de Saxe (1696-1750).

28 *Corr.*, Lahure, No. 2494, p. 33.

29 *Corr.*, Lahure, No. 2500, p. 38.

30 *Œuvres complètes de Voltaire*, A Basle, de l'imprimerie de Jean-Jacques Tournaisen, 1789, T. LXII, *Recueil des lettres*, à Mme de Fontaine, 10 février 1757, p. 194. *Corr.*, Lahure, No. 2580 [10 déc., après la défaite de Rossbach, Nov. 5], p. 98.

31 "I imagine that now they think they don't need my chariots to complete the ruin of Luc" (*Corr.*, Lahure, N. 2508); "I renounce them like the Assyrian chariots" (T. LXII, *Recueil des lettres*, p. 270, à Richelieu, 21 août).

32 *Corr.*, éd. Lahure, no. 2494, p. 33.

33 *Corr.*, éd. Lahure, no. 2489, p. 30.

34 *Corr.*, éd. Lahure, no. 2509, pp. 44-45. However, Voltaire does not refrain from pointing out, "I had only proposed this little joke for the places where the cavalry can have free rein,

* * *

It should be noted that against the Antiquarian exhumation of scythed chariots[35] conspired not only technical objections, but the same principle of drawing modern lessons from ancient military history. Indeed, the lesson on chariots said that neither Alexander nor the Romans had borrowed them from their enemies, except for the controversial use of the *currodrepanus* [sickled harrow drawn by one or two horses mounted by cataphracted lancers] mentioned by the anonymous *de rebus bellicis*. Indeed, the Roman tactic of stopping enemy chariots and elephants with *triboli*, *pali defixi* and wagon walls, or of conveying them into the lethal intervals between maniples, already tralatitious in Vegetius, Machiavelli, Joost Lipsius and Montecuccoli[36], had just then been explored in depth in volumes published in 1758 by Mesnil-Durand[37] and Guischard[38] , who – after

and I imagined that wherever a squadron can go abreast, small chariots can go too."

35 The type and use of Assyrian scythed chariots has only recently begun to be understood. V. Tamas Dezső, *The Assyrian Army. I: The Structure of Neo-Assyrian Army*. 2 *Cavalry and Chariotry*, Budapest, Eőtvős University Press, 2012, pp. 55 ff.

36 Already in Machiavelli's Art of *War*, to Alamanni's objection about the innovative scope of artillery, the papal general Colonna responds by likening it to elephants and scythed chariots and citing the related maxim "one must let pass what cannot be stopped," taken from Vegetius (*ERM* III 24: *quadrigae falcatae ... ut primum magnum intulere terrorem, ita post modum fuere derisui*). V. Justus Lipsius, *De militia romana,* ed. 1602, pp. 154, 175. The Roman tactics of letting chariots and 'lionfants' pass in the intervals is also mentioned by Raimondo Montecuccoli (*Delle battaglie. First treatise*, in R. Luraghi, ed., *Le opere di Raimondo Montecuccoli*, Rome, USSME, 1988, II, pp. 63 and 93 (on the Roman technique of frightening elephants with the brulotto system by sending pigs sprinkled with burning pitch against them). Giardina (*cit*., xii) recalls "the hippodrome effect" aroused by the scythed chariots according to Xenophon (*An.*, I, 8, 20) and Plutarch (*Sull*., 18, 6: at Chaeronea "the enemy scythed chariots arrived on the target sluggishly, like a bullet lacking momentum, and the Roman soldiers, clapping their hands and laughing, asked for an encore, as is customary in the hippodrome during horse races.")

37 François-Jean de Graindorge d'Orgeville de Mesnil-Durand (1729-1799), *Suite du Projet d'un ordre français de tactique*, à Paris, chez Charles-Antoine Jombert,1758, p. 28 (on the scythed chariots of Archelaus, general of Mithridates, neutralized by Sulla at Chaeronea thanks to the extreme rapidity of the legionary attack) and 234 (the wedge deployment on a short line compels both cavalry and enemy chariots to deflect the momentum to either side).

38 Karl Gottlieb Guichard (1724-1775), *Mémoires militaires sur les Grecs et les Romains*, à La Haye, chez Pierre de Hondt, 1758, I, p. 135 ("The Romans never fought with chariots. We only find Barbarians who used it in war; like the inhabitants of the British Isles"); p. 105 (but the Romans used *ballista* chariots placed at the corners of the squares); p. 115 (simple chariots in the Trojan style, and scythed in the Persian style); p. 235, p. 239 (Alexander's tactics against chariots: archers to take out chariots and horses, and drivers to jump on abandoned chariots and drive them behind the lines by driving them through phalanx intervals). Id., *Mémoires critiques et historiques sur plusieurs points d'antiquités militaires*, à Paris et à

the death, in 1752, of the knight de Folard[39] – were at that time the leading military exegetes of classical literature.

When the Seven Years' War was over, three more were added: the multifaceted adventurer Maubert de Gouvest, the Neapolitan Duke of St. Arpino[40] and the philologist general Joly de Maizeroy. On the subject of the Battle of Tunis (255 B.C.), in which the Spartan Xanthippus, serving in Carthaginian army, destroyed the army of Atilius Regulus, Maubert argued – against Folard – that the Carthaginian scythed chariots must have played an important role, because Xanthippus had not deployed them in cordons along the entire front, but assembled them in squadrons hidden from the infantry: and at the moment of the attack the phalanx had opened up, letting them pass through the intervals[41] . Joly, too, reevaluated the tactical role of the ancient tanks: not the falcati, however, but the armoured, bovine-drawn country brulottes, with covering and even breaking functions [provided, however, that the line of fire was replaced by the shock column]:

> "I do not know why we should not make use of many of the means employed by the ancients. For example, the Spaniards, fighting against Hamilcar, filled carts with combustible materials, to which they hitched oxen; these animals, sensing the heat, began to run, and disturbed Hamilcar's entire order of battle, which was defeated. Applying this to us, I would have wagons built, ten to twelve feet wide and no more than eight feet long, harnessed to six oxen abreast, which would have their heads and shoulders armoured to the hock. This way, once set in motion, they will not easily turn back. The carriage will be filled with dry wood, godron and firecrackers, or with pistol barrels loaded only with gunpowder. My wagons, lit and pushed towards the enemy on a beautiful plain, will be accompanied, for a certain distance, by well-armoured horsemen who will prevent them from turning. I will follow them with my troops formed into various columns. If the enemy fires his cartridge cannon at the wagons, my columns will be spared. If a few of my chariots reach his line, they will cause enough disorder to

Strasbourg, 1774, I, p. 111.

39 Jean-Charles de Folard (1669-1752), *Histoire de Polybe*, I, p. 154 (Antiochus against the chariots of the Galatians); III, p. 137 (Caesar against the scythed chariots of Pharnax II at Zela in 47 B.C.).

40 Alonso Sanchez de Luna duca di sant'Arpino, *Delle milizie greca, e romana*, In Naples, in the Stamperia Simoniana, 1763, pp. 362-63: .

41 Jean-Henri Maubert de Gouvest (1721-1767), *Mémoires militaires sur les Anciens. Ou Idée précise de tout ce que les Anciens ont écrit relativement à l'art militaire*, à Bruxelles, 1762, I, p. 39. Guichard (*Mém. Mil.*, I, pp. 45-56) also criticized Folard's interpretation of the Battle of Tunis, but did not mention chariots (*Comm.*, I, pp. 150 ff.).

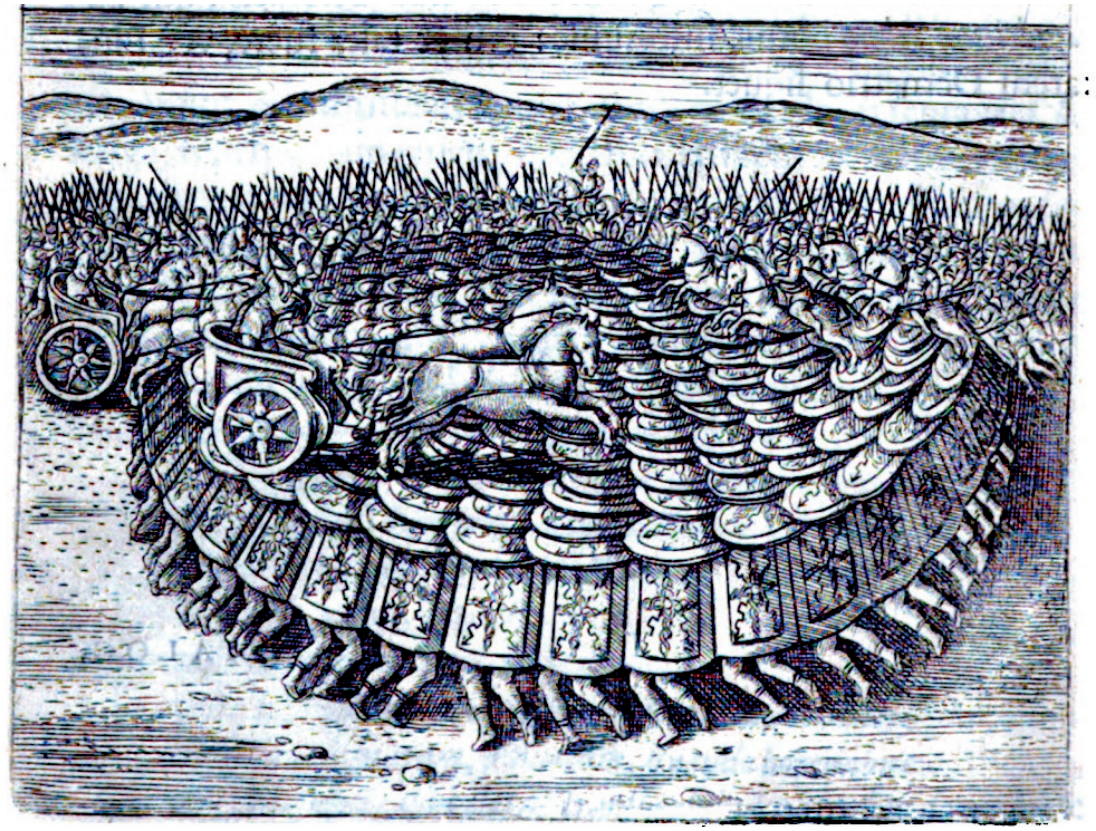

Fig. 1. Ivsti Lipsi *Poliorceticon,* ed. tertia, Antverpiae, ap. Moretum, 1605, p. 32
The imaginative engraving refers to the eulogy of Aelius Aristides (Εἰς Ῥώμην, 84) to Roman soldiers, "*quorum scuta in caput sublata, vel currus sustineant*" (ἀσπίδες δὲ ὑπὲρ κεφαλῆς ἐξαρθεῖσαι μετεώρους ἂν δέχοιντο δρόμους).

> disturb him; however, the novelty alone will surprise him to the point where he will not know what course to take. If the ancients, who made use of armed chariots and elephants, had not been formed in close phalanxes, but in columns with large intervals between them, they would not often have suffered more damage than the enemy."[42] .

42 Paul-Gédéon Joly de Maizeroy (1719-1780), *Traité de tactique pour servir de supplément au Cours de tactique théorique, pratique et historique*, à Paris, chez J. Merlin, II, p. 283. V. pure *Tableau général de la cavalerie grecque composée de deux mémoires et d'une traduction du traité de Xénophon intitulé 'Le Commandant de la cavalerie' avec des notes, accompagné d'un détail de la composition de la phalange et précédé d'un mémoire sur la guerre considérée comme Science*, Paris, De l'imprimerie royale, 1780, pp. 34 ff., 114, 120, 146.

* * *

A few years later, Voltaire's relationship with Catherine of Russia and the Sixth Russo-Turkish War (1768-1774) seemed to bring the almost octogenarian hermit of Ferney revenge on the war ministry: *nemo propheta in patria.* France does indeed support Turkey, but Voltaire, while trying to place his Swiss watches as much in St. Petersburg as in Constantinople (and thence in Peking), censes Semiramis, whom he now calls Tomyris as well, the belligerent queen of the Massageti who used the skull of Cyrus the Great as a cup. And it is almost by right of conquest, that "Cyrus' chariots" now become "Tomyris' chariots."

In February 1769 Voltaire sent Catherine the drawing of the scythed chariot, which he asserted was the work of an unnamed official[43]. The drawing has been lost, and we know of its existence only from a Russian archival note to a letter dated "February" in which, moreover, there is no mention of the drawing. More likely, it was attached to another letter-one of 90 found in 1935-dated Feb. 26, 1769, in which Voltaire pretends to report the opinion of "a man with new ideas, " according to which

> "on the vast plains where your troops are marching, it would be easy to make successful use of the old war chariots by reinventing them. He imagined chariots with two drawbars protected at the end by a wide shaffron which would cover the horses' potrail. Each very light chariot would be driven by two riflemen carried behind the chariot on a loft. These chariots would precede the cavalry. This spectacle would astonish the Turks, and anything that astonishes them subjugates them. What would be worth nothing in a mountainous country could be marvellous on the plains, at least for one campaign. The trial would cost very little. It could be very useful without doing any harm. This is what my dream-creature told me, and I repeat it to the heroine of our century. She will judge at a glance. She may laugh, but she will forgive zeal." [44]

In the following letter, dated May 27, 1769, Voltaire wrote that he had "saw again" the unnamed "former officer who proposed war chariots in the war of 1756" and that "Count d'Argenson, Minister of War, made them try out. "

> "But as this invention could only succeed on vast plains such as

43 *Oeuvres complètes de Voltaire: Correspondance*, édition de Charles Lahure, Hachette, Paris, 1861, T. XXXII, No. 5706 (à Ferney, février 1769, p. 394 nt).

44 V. Aleksandre Stroev [cur.], *Voltaire-Catherine: Correspondance 1763-1778*, Editions Non Lieu, Paris, 2006, pp. 76-77 (courtesy of Mario Corti). In the Russian websites the letter is erroneously backdated by one year, to Feb. 26, *1768*, that is, three days *before* the Polish pronouncement of Bar that triggered the war!

> those of Lützen, it was not used. He [the officer] still claims that only half a dozen of these chariots, preceding a cavalry or infantry corps, could disconcert Mustapha's janissaries, unless they had *chevaux de frise* in front of them. That's what I don't know. I am not a murderer by trade; I am not a man with plans; I only beg your majesty to forgive me for my zeal."[45]

The Empress' response, negative, came in the fall :

> "There is nothing that proves to me more the sincere part you play in what concerns me than what you tell me about these newly invented chariots; but our soldiers are like those of all other countries: untried innovations seem dubious to them."[46]

It seems to end there: indeed, on February 2, 1770, Voltaire congratulated the "mistress of the Black Sea."

> "This venture is better than the chariots of Cyrus, and especially than those of Solomon, which were useless to him. My chariots, Madam, lower their flags before your ships"[47]

But British advice to the Russian fleet is not enough; the war continues. The wrinkled *savant* sniffs out the final offensive in the Adrianople plain and returns to the fray with two letters dated April 10 and 14,[48] to which he encloses a new drawing he says differs from the ancient chariots, although he admits that the advantage consists solely in technological surprise and is therefore not repeatable, as demonstrated by the ancient legionnaires' disregard for scythed chariots:

> "I beg your pardon if I dare to insist again on the chariots of Tomyris. Those which are placed at your feet are of a manufacture quite different from those of antiquity. I am not in the homicide business. But yesterday two excellent German murderers assured me that the effect of these chariots would be unavoidable in a first battle, and that it would be impossible for a battalion or a squadron to resist the impetuosity and the novelty of such an attack. The Romains made fun of war chariots, and they were right; they are no more than a bad joke when you are used to them; but the first sight of them must certainly frighten you and throw everything into disarray."

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45 *Corr.*, Lahure, XXII, No. 5598 (27 mai 1769, pp. 452-53).

46 *Corr.*, Lahure, XXIII, No. 5648 (de Catherine, 4-15 auguste 1769, p. 24).

47 *Corr.*, Lahure, XXIII, No. 5775 (2 février, p. 108).

48 *Corr.*, Lahure, XXIII, No. 5820 (10 avril, pp. 154-155). The letter of 14, with attachments, is inferred from Catherine's reply (see *infra* nt. 51).

"All right," he continued, "the Empress' military advisers were against it: but they would say why! Instead, his experts assured him that the only way to stop the chariots were Friesian horses"[49]. Besides, the chariot was cheap: what did it cost to put a pair at the head of a squadron? At most they would have lost 2 wagons, 4 men and 4 horses. "Encore une fois, je ne suis pas meurtrier, mais je crains que je le deviendrai pour vous servir."

The letter of May 18, in which he hoped for the use of the chariots "in dry terrain such as the plains of Adrianople and the vicinity of Stambul"[50], crosses the reply. Catherine politely assures that she has ordered the construction of two prototypes "according to drawings and description" sent by her illustrious friend and she will attend the testing, but in fact she poses the ultimate *fin de non recevoir* of "her military men." Agreed, perhaps chariots would have been effective "against a regular line," but the Turks fight piecemeal, with ambushes, never deploying a single battalion or squadron, and only cannon and bayonet are effective against them[51] .

Now without restraint, Voltaire pleads again, on July 4, August 11:

> "Once again, I am not a professional, but I would bet my life that, on a plain, these armed chariots, supported by your troops, would destroy any enemy battalion or squadron that marched regularly; your officers agree; the case could happen. It is difficult that in a battle all the Turkish corps attack in disorder, dispersed, and fluttering towards the flanks of your army."[52] ; "We are currently in the most beautiful season in the world: what a charming time to beat your Turks. Will these barbarians always attack like hussars? Won't they ever come in close order, to be charged by some of my Babylonian chariots?"[53]

But the Empress no more replied, and, forced to desist, Voltaire seasoned his courtly reveries with restrained resentment:

> "I see more than ever that the chariots of Cyrus are very useless to your victorious troop."[54] ; "You beat the Turks very well without the help of these beautiful war chariots in the new fashion. I flatter myself that at present Count Alexis Orlof has taken Negrepont from them without any

49 Giardina (*cit.*, p. xii) recalls in commentary the Frontinus' *pali defixi.*

50 *Corr.*, Lahure, XXIII, No. 5844 (18 mai, pp. 174-75).

51 *Corr.*, Lahure, XXIII, No. 5846 (de Catherine, 9-20 mai, p. 175).

52 *Corr.*, Lahure, XXIII, No. 5888 (4 juillet, p. 202).

53 *Corr.*, Lahure, XXIII, No. 5923 (11 auguste, p. 230).

54 *Corr.*, Lahure, XXIII, No. 5947 (Sept. 14, p. 248).

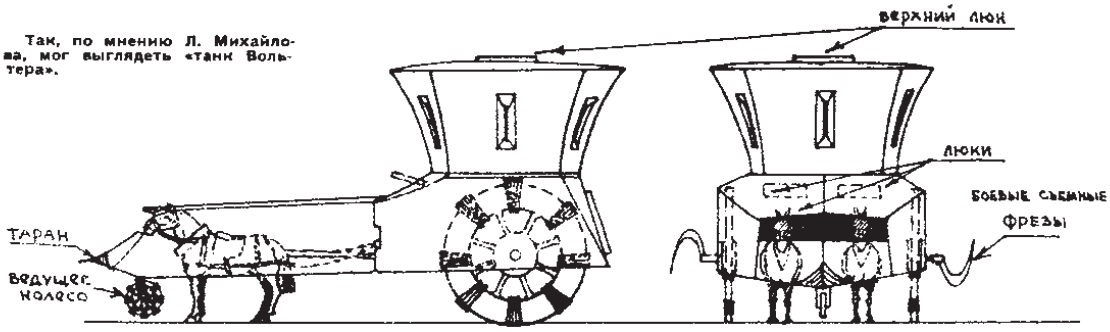

Fig. 2. Reconstruction of the "Voltaire Tank" hypothesized by L. Michajlov
Верхний люк (top hatch) люки (front doors) боевые съемные фрезы (removable fighting scythes) таран (battering ram) ведущеее колесо (driving wheel)

> chariots: all you need are triumphal chariots. I stand a long way behind them and shout *Io trionfo* in a voice that is very weak and very broken, but which comes from a penetrated heart *etc*."[55]

Six years after Voltaire's death, Chevalier de Kéralio devoted an excellent article in the *Encyclopédie méthodique - Art Militaire*[56], to scythed chariots, concluding that "this weapon has only ever been used by nations that were either barbarians or not very well competent in the military art."

As said, the technical sketch sent by Voltaire have not surfaced so far from the Russian archives. A somewhat imaginative reconstruction was hypothesized in 1984 by Lev Michajlov[57], who deduces from the terms used by Voltaire in the letter found in 1935 ['*soupente*' (loft), and '*chanfron*' (shaffron), the armoured protection of medieval war horses potrail] that it was fully armoured with a hexagonal turret [like a moka coffeepot!] equipped with loopholes on each side, as well as a front ram and side scythes (see fig. 2).

55 *Corr.*, Lahure, XXIII, No. 6234 (Nov. 18, p. 469).

56 Louis-Félix Guynement de Kéralio (1731-1793), s. v. "Char," *Encyclopédie méthodique - Art Militaire*, à Paris chez Panckoucke, à Liège chez Plomteux, 1784, II, pp. 582-584. Notable are the two volumes by Bavarian Johann Christian Ginzrot (1764-1831), royal inspector of the court vehicle factory (*Die Wagen und Fahrwerke der Griechen und Römer und ander alten Völker*, München, 1817).

57 Lev Michajlov, "Voltaire inventor of tanks? (Вольтер Изобретатель Танков? Vol'ter izobretatel' tankov?)," *Technika molodeži*, 1984, No. 6, pp. 54-56. The hypothesis is disputed by Igor' šmelev, according to whom Voltaire's tank could, if anything, have resembled the Scottish war cart ["What did it really suggest? (Что же собственно он предлагал. čto že sobstvenno on predlagal?)," *ibid*. pp. 56-58]. Courtesy of Mario Corti.

One must resign oneself to it. Voltaire's purported invention was merely a whim of the philosopher who interpreted the spirit of the centuries and the customs of the peoples but was rejected by the Académie des Inscriptions. Centuries earlier, philological passion had inspired leaders like Bartholomew of Alviano[58] and military revolutions like that of Maurice of Nassau[59]. But in Voltaire's time, the future was no longer to be sought in the past.

Among the military innovations of the early Eighteenth century there was the idea of artillery towed by steam engines, and some designs were even presented to the Academy of Sciences. In 1769 two military engineers, the Swiss Planta and the Lorenese Cugnot[60], submitted to war ministry their projects for a steam *fardier* (timber trailer). Cugnot won, and a prototype was built in 1770 and tested in the arsenal in the presence of the war minister the Duke of Choiseul[61] and ar-

58 Andrea Del Ben, *Bartolomeo d'Alviano and the classics: communication and praxis,* Sism Series, 2014, online.

59 Werner Hahlweg (1912-1989), *Die Heeresreform der Oranier und die Antike. Studien zur Geschichte des Kriegswesens der Niederlande, Deutschlands, Frankreichs, Englands, Italiens, Spaniens und der Schweiz vom Jahre 1589 bis zum Dreissigjährigen Kriege* (= Schriften der Kriegsgeschichtlichen Abteilung im Historischen Seminar der Friedrich-Wilhelms-Universität Berlin, Heft 31, Hrsg: Walter Elze). Junker und Dünnhaupt, Berlin 1941 (Nachdruck mit Vorwort, Lebensabriss und Bibliographie: (= Studien zur Militärgeschichte, Militärwissenschaft und Konfliktforschung, Band 35). Biblio-Verlag, Osnabrück 1987.

60 Joseph-Nicholas Cugnot (1725-1804), former professor of military art in Brussels and author of two treatises on fortification (1769 and 1778).

61 Etienne-François duc de Choiseul (1719-1801).

tillery inspector Gribeauval[62]; and then a second larger one in 1771. During a trial the steam *fardier* demolished a wall, provoking a smattering of laughter and satirical prints: but in fact it was Choiseul's dismissal and Gribeauval's temporary disgrace that shelved the project. In 1797 Bonaparte had the second prototype inspected, but the planned experiment was cancelled by his departure for Egypt.[63] .

In fact, the military's abandonment of the steam artillery train was brought about by both technical obstacles and the simultaneous development of horse artillery. The function of the tank is to combine fire, shock, and speed. This had been attempted between 1540 and 1580 with the tactics of "caracolling" on enemy pike squares in successive lines of pistoleers firing and then swerving off the rear to reload their weapons and charge again[64], a tactics in which the German

62 Jean-Baptiste Vaquette de Gribeauval (1715-1789).

63 "Note sur la première locomotive, inventée en 1769 par Cugnot", *Journal des économistes*, No. 125, 15 septembre 1851, pp. 67-71.

64 Sir Charles Oman, *A History of the Art of War in the Sixteenth Centur*y, London, Methuen & Co., 1937, pp. 86-87 ("The most pernicious habit of the pistoleers was the 'caracole' (…) This was a cause of disorder and confusion, unless the men were extraordinarily well trained, and all of good morale.") and 41-2, 73, 226, 386-7, 454, 498, 500, 503, 548, 563.

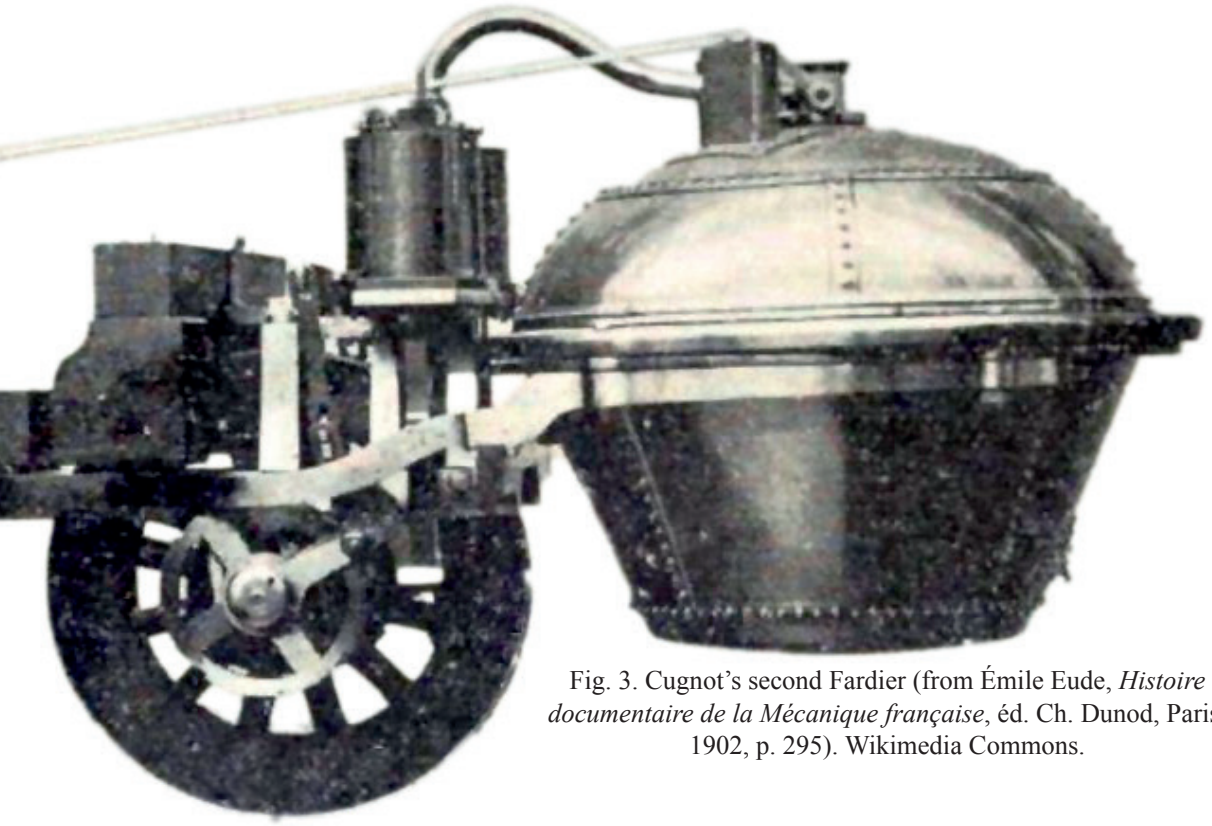

Fig. 3. Cugnot's second Fardier (from Émile Eude, *Histoire documentaire de la Mécanique française*, éd. Ch. Dunod, Paris, 1902, p. 295). Wikimedia Commons.

Schwarzreiter, armed with brown armor and two-wheel lock pistols, specialized.

Even if *caracole* "almost invariably proved" to be "at best ineffective, at worst disastrous against infantry or cavalry" and "indecisive" in clashes between mounted pistoleers[65], François de la Noue (as sir Charles Oman pointed out) regarded "this tactical device as an error on the part of the reiters, not as their proper system"[66]. Indeed, la Noue was keen to emphasise how the Reiter's caracole proved particularly effective - and should therefore be practised - not against the opposing infantrymen, but against the Gendarmes[67]. So, at the end of the 16th century cavalry was largely of armoured pistoleers, even if the *caracole* had ben abandoned. But *caracole* shows some analogies, if not a direct connection, with the successive *Oranienreform* of infantry based on the musketeer tactics. A reform which, according to a letter sent by Louis of Nassau to Moritz from Groningen the 8 December 1594, would have been inspired by the reading of a passage from Aelian's *Tactica*, in which the scholar, instructing the emperor Trajan on the difference between the tactics of the modern legions and those of the ancient phalanx, mentioned the so-called *choreus* ('choreography', roundabout) carried out by the light infantry around the hoplite squares to target them with continuous jet missiles[68].

Later the task to combine fire and speed shifted to mounted arquebusiers[69],

65 Major E. W. Sheppard (Royal Tank Corps), "Sixteenth century cavalry", *Cavalry Journal*, 27, 1937, pp. 600-601.

66 François de la Noue, *Discours politiques et militaires*, A Basle, de l'Imprimerie de François Forest, 1587, pp 307-314 ("Premier Paradoxe: Qu'vn esquadron de Reitres doit battre vn esquadron de lances"). See Oman, *cit.*, pp. 41, 463.

67 Marco Mostarda, who kindly reviewed this chapter, suggests that "there is some reason to suppose, on the basis of De la Noue's experience (however, it must be said, partial, in that it matured mainly in the wars of religion in France: but these are wars that should be studied more carefully precisely because they were fought largely by the mounted gun), that it was the advent of the cuirassier armed with a wheel lock pistol - not the square of pikes and then the tercio, which combined pike and musket - that decreed the end of heavy cavalry armed with a lance. The Reiter rarely failed, because he certainly did not waste his chances by aiming at the Gendarme's bulletproof breastplate, preferring to go for the big target: the horse's head and chest, particularly exposed during the initial frontal collision between cavalries. When, after the first collision, a melee ensued, the still-loaded pistols were used against the Gendarmes' legs, usually unprotected: and – as we can learn from the death of John of the Black Bands and from the Monluc's *Commentaires* – leg and arm wounds from firearms had the unpleasant characteristic of resulting often in fatal medical complications."

68 Werner Hahlweg, cit. V. Ilari, *Imitatio*, *cit.*, pp. 333 ss.

69 Flaminio Della Croce, *L'essercitio della Cavalleria et d'altre materie*, In Anversa, Appresso Henrico Aertsio, 1625, ff. 184 ss.

then dragoons, and especially to mounted artillery, an embryo of which was created as early as the Thirty Years' War by Lennart Torstensson, commander of the Swedish artillery, assigning each infantry regiments two horse-towed 3-pounder cannons for direct support. Since the Great Northern War, they were in turn Russians dragoons to be assigned similar fire support and it was after gaining experience with them that Frederick II created the first mounted battery in 1759. The technological advances in artillery, ammunition, and gun carriages allowed the diffusion and improvement of the horse or flying artillery, but it was very expensive because it merged the requirements of cavalry and artillery: suitable and trained men were needed, and 14 first-rate horses were required for each piece (six towing and eight saddle horses for the servants), not counting those necessary for carting ammunition. Austria adopted it in 1778, followed by Hanover (1786), Denmark (1791), France (1792), England (1793), Russia (1794) and Portugal (1796)[70].

The new artillery type played an important role in the Napoleonic, Mexican-American and American Civil War battles. And considering that it did the Anglo-Boer one as well, it was not that much less long-lived than the now 100-year-old, and already somewhat obsolete, armored troops. But in some way, the famous machine-gun *tachanka* of the Russian Civil War paid an unwitting homage to the *savant* idea rejected by the Great Catherine's generals.

70 Jean-Pierre La Combe-Saint Michel, *Rapport sur la création d'un corps d'artillerie à cheval*, fait à l'Assemblée nationale, au nom du Comité Militaire, ... le 3 mars 1792. "Note sur l'artillerie à cheval," *Précis des événements militaires*, I, Hambourg, chez Fr. Perthes, 1799, pp. 206-212. Tadeusz Kościuszko (1746-1817), *Manoeuvres of Horse Artillery* ("written at Paris in the year 1800, at request of General Wm R. Davie, then envoy from the United States to France"), New York, Campbell and Mitchell, 1808. Christophe Clément (b. 1771, *chef d'escadron* of the artillery of the Italian Royal Guard), *Sur l'artillerie à cheval*, Pavia, chez Cavelli, 1808 (German transl. 1821). On the tactics of horse artillery see Karl-Friedrich von Kerner (1775-1840), *Betrachtungen über die reitende Artillerie*, Ludwigsburg, bey Friedrich Nast, 1803 (= Bartenstein, bey L. Fixdorff & Kleinheinz, 1812). the treatises by Karl von Decker (*Die Gefechtslehre der Kavallerie und reitenden Artillerie*, Berlin, 1819) and General Ernst Monhaupt (1775-1735): *Taktik der reitenden Artillerie*, Berlin 1837); *System der reitenden Artillerie*, Leipzig, Baumgärtner, 1823 and Über den Gebrauche der reitenden Artillerie, Berlin, Decker & Humblot, 1836. See "Parallèle de l'artillerie à pied et de l'artillerie à cheval," Mémoire lu à l Académie royale militaire de Suède (*Magazin for militair Videnskabelighed*, VII, 1824, iv, p. 513). Particularly interested in mounted artillery was the Piedmontese in Austrian and later in French service Giuseppe Ravicchio Baron of Petersdorf (1767-1844), who owned a copy of Kerner (1803) and translated Decker's essay (1831) and Monhaupt's *Taktik* (1840) into French. See also Karl Adolf von Strotha (1786-1870), *Die königliche preußische reitende Artillerie vom Jahre 1759 bis 1816*, Berlin, Vossische Buchhandlung, 1868.

Fig. 4. If at Issus, instead of Darius, the Persian chariots had been led by Voltaire, would Alexander have been defeated? Alexander Mosaic, Detail. House of the Faun, Pompeii, now in Naples National Archaeological Museum. Self-photographed by Berthold Werner, May 2013, CC SA 3.0 Unported (Wikimedia Commons).

European Cavalry, 1815-1871: The Challenge of "Arms of Precision."

by Gervase Phillips

The decades following the end of the Napoleonic Wars may seem, at first glance, a barren period for the historian of cavalry. The final climatic battle, at Waterloo 18 June 1815, had been an inauspicious day for the mounted arm. The failure of French cuirassiers, who charged *en masse* repeatedly to break the squares of Wellington's foot marked the genesis of a new military credo: "Cavalry cannot charge infantry."[1] Only when infantry was already shaken or broken, might a well-timed cavalry action crown a victory already won by the other arms. In terms of its battlefield role, the cavalry of the early nineteenth century was now itself, according to Professor Édouard De La Barre Duparcq of the French military academy Saint-Cyr, merely "an *accessory* arm."[2]

Naturally, cavalry still fulfilled a wide sphere of field duties beyond the battlefield, such as providing advance guards, establishing vedettes and outposts, undertaking reconnaissance, and screening the movements of armies. Yet their scale was limited. The "strategic use of cavalry" (undertaking bold, independent operations, distant expeditions, "partisan" duties, or raids against the enemy's lines of communication) had been "recognised and practised during the Napoleonic wars." In their aftermath, however, "the very idea of thus utilising the cavalry arm had fallen into abeyance…"[3]

In part, this sense of the mounted arm's decay was simply the consequence of the enervating effects, for military professionals at least, of long years of peace. The Victorian military historian F. N. Maude wrote of the Prussian cavalry in this period, "officers were weary of war, their ruined estates needed all their attention…" Those officers without private means, who remained with their reg-

1 Frederick. N. Maude, *Cavalry: Its Past and Future*. London: William Clowes, 1903, 181.

2 Édouard De La Barre Duparcq, *Elements of Military Art and History*. Translated by George W. Cullum. New York: D. Van Nostrand, 1863, 116.

3 F. Chenevix Trench, *Cavalry in Modern War*. London: Kegan Paul, 1884, 53.

iments, were "dispersed all over their districts wherever forage was cheapest … condemned to a life of stagnation, against whose numbing influence only the strongest will can hope to contend."[4] Yet this lack of vitality was not simply born of the monotony of garrison duties. The development of new "arms of precision" for the infantry, only seemed to weigh the scales of combat yet further against the horse trooper, armed primarily with sword or lance.

The 1830s and 1840s saw key developments in the loading and firing mechanisms of muskets that made it possible to place accurate rifles, "arms of precision," into the hands of all line infantrymen. Prior to this, the rifle had been a specialist weapon, accurate but slow to load and fire, issued only to the relatively small proportion of soldiers that composed the light infantry and skirmishers. In 1842, the Prussian infantry adopted the "Dreyse needle gun," a bolt-action, rifled breech-loader. This could fire six rounds a minute, compared to the two or three that a well-drilled regular could achieve with a smoothbore muzzle-loader. Most armies, wary of poor fire discipline and excessive expenditure of ammunition, retained muzzle-loaders. Yet, after 1846, these were generally rifled rather than smooth-bored. This was made possible by the use of the cylindro-conoidol bullet developed by Claude Étienne Minié. This small bullet eased loading, giving the rifled musket the same rate of fire as an old smoothbore. Yet, when fired, the bullet expanded to fit the rifling of the barrel, resulting in greater range and accuracy. The new arms were simply more dependable in combat too. By the 1830s, most European armies began issuing muskets with percussion caps, a recently developed ignition system that significantly reduced the rate of misfires and operated reliably in all weather conditions.[5]

On military firing ranges across Europe, the performance of the new arms of precision seemed to usher in a revolution in tactics. The effective range of the old smoothbores had been less than 200 yards (183m). In contrast, Sir Charles Shaw cited experiments in which 100 soldiers armed with Miniés had fired at a common target at varying known ranges; at 450 yards (411m), 81 shots out of 100 had hit, 51 out of 100 at 700 yards (640m) and 31 out of 100 at 1000 yards (914m). He concluded that "a new era in warfare has commenced and the new firearm, with its ammunition, will make a complete change in the system

4 Maude, *Cavalry: Its Past and Future*. 159.

5 Earl J. Hess, *The Rifle Musket in Civil War Combat, Reality and Myth*. Lawrence: University of Kansas Press, 2008, 24-26. Dennis E. Showalter, "Infantry Weapons, Infantry Tactics, and the Armies of Germany, 1849-64," *European Studies Review*, Vol.4 (1974), 119-140.

Juliusz Kossak: *Polish lancers at the Battle of Ostrołęka, 1831*

of actual warfare." Cavalry, Shaw noted, offered a particularly large target: a squadron was 200 feet (61m) long and nine feet (2.74m) high. This, in theory, would make them vulnerable as they manoeuvred on the battlefield even at extreme ranges. Shaw ventured to suggested that "half of the balls fired at cavalry at 1400 yards [1280m] would take effect." The squadrons would be exposed to, at least, six minutes of such fire to cover 1100 yards (1006m) as they manoeuvred at the trot, *before* they even reached charging distance, 300 yards (274m) at the gallop.[6]

Small wonder then that, as the Victorian hussar Valentine Baker later noted, with the arrival of arms of precision, "officers of experience and weight in all armies were found, who urged that the days of cavalry had passed away, and that

6 Sir Charles Shaw, "Modern Warfare, Or Minie Versus Cavalry And Field Artillery." *The Times*, December 27, 1854.

this arm in future would only become an encumbrance to an army."[7] Yet they were mistaken. The half century following Waterloo would demonstrate both the mounted arm's continued potency on campaign and its capacity for reform, notwithstanding the "stagnation" of peacetime or the challenge posed by arms of precision.

In terms of doctrine, organisation and training, the Prussian army would set the pace. Surveying the history of the mounted arm over the course of the nineteenth century in 1903, F. N. Maude, would date the beginning of what he termed "the revival of the Prussian Cavalry" to the decades immediately following 1815.[8] This concept of a "cavalry revival" is a useful one more widely, for eventually most European cavalries would emulate the Prussian model. And "revival" is the most appropriate term. This was not some atavistic impulse, ignoring all that had changed since the days of Frederick the Great's dauntless cavalry generals Friedrich Wilhelm Seydlitz and Hans Joachim von Zieten, although such figures remained exemplars in terms of leadership. Rather, the revival was a practical endeavour both to recover eroded capabilities (such as the "strategic" role) and to hone modern tactical doctrine and training to a peak of efficiency.

Historians have, for the most part, failed to note the significance of the emerging cavalry revival during the apparently uninteresting decades following Waterloo. In 1913, George T. Denison, the Canadian officer who one might credit with establishing the field of cavalry history, set a pattern when he largely dismissed the period 1815-1854 as a period where "there were no great campaigns, and no marked improvements in the military art."[9] One exception to this tendency should be noted: Dennis Showalter's insightful article examining the Prussian cavalry arm from its destruction at Jena in 1806, through its long years of rebuilding in the half-century after Waterloo, to its successes in the Franco-Prussian War, 1870-71. This noted significant developments in training in the first half of the century that fostered mobility, cohesion and initiative, laying the groundwork for a mounted arm that might still play a decisive role on campaign.[10] One of the chief theoreticians of the early cavalry revival was

7 Valentine Baker, "Organisation and Employment of Cavalry," *Royal United Services Institute* [hereafter *RUSI*] 17, 1873, 375.

8 Maude, *Cavalry: Its Past and Future,* 158-178.

9 George T. Denison, *A History of Cavalry From the Earliest Times*. London: Macmillan, 1913, 341, 247-355.

10 Dennis E. Showalter, "Prussian Cavalry 1806-1871", *Militärgeschichtliche Miteteilungen,* 19 (1976), 7-22.

Count Frederick Wilhelm von Bismark. This Napoleonic War veteran's manuals on cavalry tactics were widely disseminated among European soldiers, helping to make the Prussian revival ultimately a continent-wide one. Bismark identified speed as the defining and irreplaceable characteristic of well-mounted and well-trained cavalry: "great rapidity in all manoeuvres is its first and most eminent quality and by which it has obtained that supremacy which so many fields of battle testify."[11]

Arms of precision notwithstanding, infantry, artillery and their baggage remained ponderous in comparison. An infantry division could typically march about fifteen miles (24km) in a day (8-12 hours, depending on the weather and condition of roads). Twenty miles (32km) was considered a "forced march," which would leave soldiers foot-sore and exhausted. Good cavalry could cover from twenty-five to thirty miles (40-48km) in a day at a relatively leisurely pace. By alternately walking and trotting their horses and taking a ten-minute rest every hour, regiments could stay reasonably fresh. When necessary, cavalry could march fifty miles (80km) in a day, although this pace could not be sustained for more than 24 hours, unless a regiment was prepared to pay the price in dead and lame horses. Over shorter distances, cavalry could manoeuvre at a comfortable pace of 8 miles an hour (13kmh), or 12 miles an hour (19kmh) at a fast canter. At the trot, a regiment of horse could deploy on the battlefield three times faster than infantry at the "quick march." Cavalry was thus "the instrument of speed in war, *par excellence*."[12] "Motion", wrote Bismark, "is the element of cavalry; it is therefore to be employed upon every description of ground, so long as the army is in movement."[13]

Motion, however, would be of little use if regiments lost cohesion as they deployed, or left a trail of straggling troopers and horses in their wake as they rode across country. The basis of Bismark's system was thus achieving a high standard of military equitation for individual troopers and fostering the capability of formations to maintain order as their crossed difficult terrain or re-deployed, for example from line to column. Yet it was not simply the well-drilled

11 F. W. von Bismark, *Lectures on the Tactics of Cavalry*, translated by N. Ludlow Beamish. London: William Ainsworth, 1827, 45-47.

12 Frederick G. Guggisberg, *Modern Warfare or How Our Soldiers Fight*. London: Thomas Nelson, 1903, 32-33; Louis Jules Trochu, *L'Armée Française en 1867*. Paris: Amyot, 1867, 184.

13 Count F. W. von Bismark, *Bismark's Tactics and Manoeuvres of Cavalry*, translated by N. Ludlow Beamish. London: John Ebers, 1830, 219. Sir G. J. Wolseley, *The Soldier's Pocket-Book*. London: Macmillan, 1882 310-312.

movement of horses and riders that had to be accomplished at pace. For an arm whose defining quality was motion, decision making too had to be rapid. Cavalry leadership had to exhibit "a quick *coup d'oeil* – a calm, firm mind – a boldness sometime rash, sometime cautious – in a word a great deal of talent." Here the impetuous commanders of the past served as exemplars; Bismark quoted with approval von Zieten's remark to his king: "the moment I see the enemy, my dispositions are already made."[14]

It was, of course, not enough simply to express these ideals in principle. The enervating effects of peacetime and garrison duties had to be countered by rigorous and well organised training. In 1842, Prussian cavalry undertook its first field manoeuvres for twenty-two years. Firstly, under the guiding hand of Field Marshal Friedrich Graf von Wrangel, and then under his pupil, Prince Frederick Charles, a spirit of initiative was fostered in officers and men in a series of large-scale exercises. The autumn manoeuvres of 1853 were of particular significance. Regiments demonstrated considerable skill in manoeuvring at pace, changing front, and operating in smaller, handier formations. Squadron columns and half columns were employed widely to facilitate cohesion in movement. The handling of lines in the attack was practised and perfected: rear lines protected the flanks of preceding lines or delivered flank attacks in support of frontal charges. The evolutions that were devised at these manoeuvres gave mounted troops far greater tactical mobility, improved their exploitation of terrain, and fostered the capacity to seize fleeting opportunities. They were acknowledged by subsequent generations of cavalrymen, such as Sir John French, as having begun "a new era in cavalry training."[15]

While Prussian cavalry set new standards in training and doctrine, the experiences of other armies on campaign would also give grounds for more confidence in the future of the mounted arm. During the Russo-Polish War, 1830-31, although ultimately outmatched by numerically superior Tsarist forces, Polish troopers scored some notable successes. At Stoczek, on 14 February 1831, a Russian field army deployed for a frontal assault on a strong Polish position, artillery and light infantry holding a dyke across their line of advance. The Polish commander, General Józef Dwernicki, pushed his cavalry forward. Advancing undetected through the dense cover provided by a forest, they manoeuvred to the Russian flank. From there, they fell upon the Russian batteries as they established their positions: "In a moment both artillery and the [Russian] cavalry

14 Bismark, *Tactics and Manoeuvres of Cavalry*, 45.

15 John D. P. French, "Cavalry Manoeuvres," *RUSI* 39, 1895, 560.

were completely dispersed." The disorder rapidly spread to neighbouring Russian infantry columns caught on the march, and "a general and disorderly retreat commenced."[16]

Similar impetuosity was exhibited at Dembe-Wielke, 30 March 1831. There, a Polish cavalry brigade, organised in "columns of attack," executed a twilight sabre charge. Their initial deployment was covered by artillery fire, and infantry acted in close support as they advanced. A Russian battery was taken; its accompanying infantry scattered into near-by woodlands. This rather effective combined arms approach was evident through much of the conflict. At Worna, 10 July 1831, the Polish cavalry first masked the withdrawal of their hard-pressed army's batteries. They then successfully pulled off an age-old light cavalry tactic: the feigned retreat. Russian troopers pursuing what they thought was a disorderly flight were led into woodland teaming with Polish light infantry.[17]

Besides these tactical successes, the conflict also witnessed the revival of "strategic cavalry." George T. Denison highlighted the "well executed partisan campaign of Polish General [Henryk] Dembinski" in Lithuania in the early summer of 1831. Leading a mobile detachment of around 3800 men, Dembinski covered some 400 miles in around 20 days, through territory "swarming with Russian troops." Co-ordinating with insurgent Lithuanian cavalry that had been actively harassing Russian lines of communication, he seized large quantities of supplies and remounts. Some of the latter he employed to create a force of "mounted infantry." These could maintain pace with his cavalry and seize and defend positions on foot as required. Overall, Dembinksi's campaign, Denison suggested, prefigured "the cavalry raids of the American Civil War."[18]

Alongside the promise of the new era in cavalry training, such exploits challenged the narrative of the mounted arm's battlefield impotence. The tactical question of the possibility of successful shock action against formed infantry on the battlefield remained a subject of controversy. Bismark thought that "brave cavalry, under the command of a chief who is intrepid and impressed with the necessity of conquering, will overthrow any infantry, but success thus gained is attended with considerable loss." N. Ludlow Beamish, a British officer who published an English translation of Bismark's 1827 treatise, could not agree and thought that such "estimates of the power of cavalry" were the products

16 Joseph Hordynski, *History of the Late Polish Revolution*. Boston: Privately Published, 1833, 111-115.

17 Hordynski, *Polish Revolution*, 208-222, 371-372,

18 Denison, *A History of Cavalry,* 342-343; Hordynski, *Polish Revolution*, 390-397.

of the "partiality and natural prejudice" of cavalry officers. Yet Bismark was an experienced veteran. His opinion could not simply be dismissed. He did not advocate charging formed masses of foot soldiers lightly and emphasised that infantry was best tackled when surprised or shaken. Thus, Bismark cautioned that "where the moral element has not been weakened, a charge of cavalry in line will seldom succeed." Nevertheless, the succession of concentrated blows struck by well-disciplined cavalry in column (as at Dembe-Wielke) seemed, to Bismark, to offer more prospect of success. If the infantry was deployed in line, then it would be vulnerable partly because, with no visible gaps to ride for, horses were impelled to move straight at their target.[19]

When charging a square, cavalry tended to veer off around the sides of the formation, as the French had done repeatedly at Waterloo. Yet some commentators pointed to the generally decayed condition of most French and German cavalry regiments in 1815, and how this had affected their capacity to deliver effective shock action. One of Blucher's generals, Friedrich von der Marwitz, had recalled the impossibility of raising efficient cavalry for the final campaigns against Napoleon: "after 1812, when the few remaining suitable horses had either died in Russia or been hopelessly overworked, we had to collect an enormous number to reconstruct the cavalry, and there was neither a sufficient supply nor was there even time enough to make suitable choice. We had, in fact, to take what we could get, old riding horses, carriage horses, cart horses, whatever the French had left over for us..." The recruits were little better, "the horses are no longer in the control of their riders. When one wants them to gallop, they bolt; when they are required to stand still, they turn about ... [the horses] obey their own untutored instincts instead of the will of their riders."[20] Such cavalry would naturally struggle to drive home a charge.

There was no suggestion that, prior to Waterloo, well-mounted cavalry had regularly broken squares. Attempting such an act was, it was understood, a desperate venture. Yet it was also acknowledged to have sometimes happened. The King's German Legion (Hanoverians in British service) had, for example, overrun a French square at Garcia Hernandez, 23 July 1812. The "apparently impenetrable" barrier presented by ranks of close order infantry was broken when "a shot from one of the kneeling ranks, by killing a horse threw both it and its rider on the bayonets, and into the gap thus made rode the dragoons."[21] Even De la

19 Bismark, *Lectures on the Tactics of Cavalry*, 88-92.

20 Quoted in Maud, *Cavalry: Its Past and Future*, 153-157.

21 Evelyn Wood, *Achievements of Cavalry*. London: George Bell, 1897, 72.

Barre Duparcq recognised that defensive firepower itself might be the infantry's undoing, whereby "four or five horsemen thrown forward are sufficient to make a breach by means of their dead horses."[22] It was understood that musket balls rarely stopped charging horses in their tracks, even those they fatally injured: "saddles will be emptied, horses will be killed and wounded, but no horse, unless he is shot through the brain, or has his legs broken, will fall, though stricken to the death he will struggle through the charge."[23]

22 De la Barre Duparcq, *Elements of Military Art and History,* 131.

23 Louis Nolan, *Cavalry: Its History and Tactics*. London: Bosworth & Harrison, 1860, 301-302.

Henri Félix Emmanuel Philippoteaux, *Chasseurs d'Afrique at Balaclava 1854*

As the century progressed, proponents of the *arme blanche* could point to other actions which defied the dictum "cavalry cannot charge infantry." On 28 January 1846, the British 16th Lancers had broken into a square of Sikh infantry at Aliwal. These had been well drilled by European officers and British veterans present at the battle asserted that their fire discipline was better than that of Napoleonic infantry.[24] During the Anglo-Persian War, at Kooshab, 8 February 1857, the 3rd Bombay Light Cavalry had "cut its way completely through a perfectly formed square" of Persian infantry, that was described as "excellent, steady and untouched by artillery." Lieutenant A. T. Moore had led the charge. As he neared the square, his horse "daunted by the flashes and the fire and the noise and crackle of the musketry," had "swerved." Moore caught up the reins in both hands, "screwed [the horse's] head straight and then coolly, as if riding at a fence, leapt him at the square." The horse "fell stone dead upon the bayonets," but that broke the square.[25]

If such exploits were possible against well-drilled infantry armed with smooth-bores, it might, nevertheless, have been reasonable to suggest that the new generation of rifle-muskets had significantly changed the equation. Fire, it was thought, would bring down men and horses long before they could close with infantry formations. In a lecture given in 1857, Lieutenant-Colonel R. A. Dixon, Royal Artillery, spoke of "the impossibility of [cavalry's] standing before compact infantry armed with the rifle." He could envisage no potential for cavalry to deliver decisive strokes on the battlefield, "We shall not see again cavalry thrown away at an early period of action, while infantry are still intact." Instead, he foresaw that the arm would only be "retained as a special reserve for determining the rout of infantry when in disorder from the action of artillery or other causes, and for reaping all the fruits of victory by pursuing and destroying a broken army."[26]

Yet the actual performance of the new arms of precision in battle did not fulfil their theoretical potential. Their accuracy had been attained at a price. As Lieutenant-Colonel Lane Fox, instructor at the British army's Hythe School of Musketry, explained in 1858, "accuracy may be increased by tightening the hold of the grooves [in the barrel of a rifle] upon the bullet," but "velocity may

24 Maud, *Cavalry: Its Past and Future*, 181.

25 "The Persian War of 1856-57," *Blackwood's Edinburgh Magazine* 90, 1861, 356. "The Cavalry Charge at Kooshab," *Southampton Herald*. 18 April 1857, 2.

26 R.A. Dixon, "The Rifle - Its Probable Influence on Modern Warfare," *RUSI* 1 (1857), 114.

be retarded by the increased friction which is produced by the pressure of the bore." The consequent low muzzle velocity of the Minié, lower than that of a smoothbore, caused its bullet to fly on a parabolic trajectory, curving through the air before finally plunging, at a steep angle, to the target. In contrast, the smoothbore, while inaccurate above 100 yards, fired on a flatter trajectory, to "produce a more grazing fire."[27]

Lieutenant Andrew Steinmetz explained the implications. In battle, unaimed smoothbore volleys exchanged by massed formations at close range had a fearful effect: "the ball met a man who happened to be in the line of fire." In contrast, "the great curvature of the rifle trajectory necessitates a most exact estimate of the distance to hit the object." Since the bullet plunged on its target rather than grazed towards it, the "dangerous space" was "reduced to a few yards." A miscalculation by the rifleman would result in a missed shot. At 540 yards (493m), a rifleman who erred in estimating the range by about 33 yards (30m), "would miss a target 10 feet high and, of course, be clear over the heads of cavalry." The Minié rifle, he knew, was "sure and terrible in practised steady hands," but he was equally certain "that nineteen-twentieths of men will never be able to use it with perfect ease." In particular, in battle, "[the soldier] excited to the highest degree, cannon-balls decimating the ranks, shells and bullets whistling their infernal tune overhead … surrounded by smoke, amid the groans of the dying and the shrieks of the wounded … will simply raise his rifle to the horizontal, and fire without aiming."[28]

This phenomenon was of especial significance to cavalry. A line of trotting cavalry advanced at four yards per second. At 500 yards (457m) range, it passed through the "dangerous space" into which bullets plunged in just seven seconds; "if the infantry fires seven seconds too soon or seven seconds too late, not a shot will hit except by chance!" Failing to stop the cavalry at 500 yards, the infantry had only two minutes at most before impact, with the cavalry moving to a gallop at 200 yards (182m) and the full charge at 100 yards (91m). The infantryman could pause to adjust his sights, but if he did so he reduced his rate of fire. Nor was it likely that, under battle conditions, he would make the correct adjustment.[29]

Experience tended to favour this argument. In China in 1860, a British bat-

27 Lane Fox, "On the Improvement of the Rifle as a Weapon for General Use," *RUSI*, 2 (1858), 481.

28 Andrew Steinmetz, "Military Gymnastics of the French," *RUSI*, 5 (1861), 386-390.

29 Steinmetz, 391.

talion fired over a body of cavalry at just 70 yards (64m).[30] The Prussian gunner Prince Kraft undertook a reconnaissance mission near Nübel, during the war with Denmark in 1864. He and a dozen or so horsemen had halted before a house "on the wall of which bullets kept on striking above our heads." The sniping came from a clump of trees which they estimated to be 800 paces (c.600m) distant. The startled Prussians thus marvelled at the range of the Danish rifled muskets. After the enemy had been driven from his position, they had the distance properly measured: "it was 240 paces" (c.182m). The enemy had made the same error in judging the range, "for he shot steadily too high."[31]

The case for the continued viability of shock action was not, therefore, unreasonable. Yet it did perhaps retard the progress of the cavalry revival in two ways. Firstly, the attention given in training to perfecting battlefield tactics led to a neglect of reconnaissance and outpost work. Secondly, it perpetuated the existing and inflexible force structure of the cavalry arms of most European armies. The cavalry arm itself was traditionally divided into three branches: heavy, medium, and light. Heavy cavalry, such as carabineers or cuirassiers, were men of large stature on large horses, 16 hands or above. Ideally, they were reserved for shock action on the battlefield, where weight was considered decisive. Medium cavalry, such as lancers or dragoons (some armies fielded heavy and light versions of the latter), were lighter men who typically rode horses of about 15 ½ hands. They were expected to be able to deliver shock action when required but also to have the stamina to be able to contribute to reconnaissance, screening and outpost work. The light cavalry, such as hussars and chasseurs, combined lightweight riders with small, hardy, and active mounts, of 14 to 15 ½ hands. Undertaking the most hair-raising and risky of "detached duties," they were, in some respects, the equivalent of modern-day special forces.[32]

Light horseman, such as the British captain Louis Nolan, became increasingly critical of the slow and inflexible heavies. It is unfortunate that Nolan's reputation will be forever tarnished by his association with the charge of the Light Brigade. He was the courier entrusted with a vaguely worded order from the British commander-in-chief, Lord Raglan, requiring the cavalry to prevent the Russians removing cannon from a captured redoubt. Lord Lucan, the cavalry

30 Steinmetz, "Military Gymnastics of the French," 389.

31 Prince Kraft zu Hohenlohe-Ingelflingen*, Letters on Infantry.* London: Edward Stanford, 1892, 34, 153-154.

32 Barre Duparcq, *Military Art and History*, 117-119. General Boissau, "Les hussards, un phénomène européen", *Revue Historique Des Armees*, 4, 1993, 14-23.

division's lacklustre commander, failed to understand the order. Nolan, allegedly quick-tempered and impatient, failed to clarify. Lucan then ordered the Light Brigade down the wrong valley, to attack a Russian battery frontally, under enfilade fire from elevated positions on both flanks.[33]

Nolan was one of the first to be killed. There is no reason to believe he misdirected the brigade deliberately and much reason to be sceptical of attempts to scapegoat him after the disaster. He was a tactical progressive, who advocated charging in a loose open line or *en fourraguers* (as foragers), a swarm of fast-moving light horsemen. Such dispersed order was particularly useful when in broken terrain or engaging enemy artillery whose firepower might exact a fearful toll from denser formations. Nolan thus advocated tackling a battery from the flanks, "in skirmish order, and with very few men."[34] Notably, while acting to support the British Light Brigade, the French 4th Chasseurs d'Afrique had charged a Russian battery and its two supporting battalions of infantry on the Fedioukine Heights *en fourraguers*. The Russians had been driven from their positions with considerable losses and the "murderous fire" upon the Light Brigade consequently lessened.[35]

For traditional shock action, delivered by heavy cavalry, troopers riding knee-to- knee at the trot, Nolan was a critic. Weight still had its victories on occasion. At Balaklava, the British army's attenuated Heavy Brigade, some 700 troopers under General James Scarlett, had launched a bold charge that drove some 3500 Russian light horse from the field. On this occasion, though, it was the Russians who had blundered. Inexplicably, they had met the British heavies at the halt. A British dragoon recalled, "But oh, the work of slaughter that began! It was truly awful; but I suppose it was necessary. We cut them down like sheep, and they did not seem to have power to resist."[36] Against more active and agile opposition, heavies faced a tougher challenge.

Indeed, as early as the mid-eighteenth century, the Prussian cavalry generals

33 Terry Brighton*, Hell Riders: The Truth about the Charge of the Light Brigade*. London: Penguin 2005. Cecil Woodham-Smith, *The Reason Why: The Story of the Fatal Charge of the Light Brigade* London: Constable, 1953.

34 Baron Antoine-Henri de Jomini, *The Art of War.* Westport: Greenwood Press, 1975, 306; Nolan, *Cavalry*, 247-248; Brent Nosworthy, *Battle Tactics of Napoleon and His Enemies.* London: Constable, 1995, 284-285.

35 Denison, *History of Cavalry*, 351, J.W. Fortescue*, A History of the British Army,* 13, London, Macmillan, 1930; 104*, The Times*, November 13, 1854.

36 Tlepolemus, "Peace and Patriotism: A Letter to Irenaeus," *Blackwood's Edinburgh Magazine*, Vol.77, 1855, 108.

Seydlitz and Zeithen had challenged the conventional wisdom that the greater weight would always triumph in shock tactics. Placing more emphasis on pace, Zeithen, in particular, had led his hussars to victory over heavier opponents in the sort of set-piece engagements that light cavalry would traditionally have avoided. Henceforth, light cavalrymen grew in their confidence to undertake shock action.[37]

During the Hungarian rebellion of 1848-49, Hungarian hussars demonstrated their capacity to best heavy cavalry in a well-timed charge. At Mezökövest, 28 February 1849, the 9th Nikolaus Hussars charged Austrian cuirassiers supported by artillery. A Hungarian officer later recalled "a splendid sight it was to see this swarm of light horsemen dashing in on the cuirassiers, bursting their ranks asunder, cutting down, destroying, and scattering them in all directions." An Austrian acquaintance of Louis Nolan summarised his conclusions on the experience of the war as follows: "The success of a cavalry attack depends not so much on the description [heavy or light] of cavalry or horse employed, as on the *determination* of the men; on their being accustomed to victory; on confidence in their leader; and last, not least, on the charge being made at the right moment."[38]

For Nolan, too, pace was the key to modern cavalry tactics, but he also understood that shock and firepower were not antithetical to each other: "Horse artillery can move with equal speed and in concert with cavalry … and by their fire afford the cavalry those favourable moments at which to charge is to conquer." Cavalry to flank or in pursuit would cause enemy infantry and batteries to deploy. Close-order formations of infantry could then be shattered by cannon fire. If they dispersed, they could be ridden down by the troopers. Guns positioned to flank could keep firing until the cavalry were close to their target. In retreat, horse batteries and mounted squadrons supported each other, one screening whilst the other withdrew. Modern horse artillery, therefore, had, in Nolan's view, actually tilted the odds back in cavalry's favour: "with such powerful assistance (under almost all circumstances), cavalry are surely more formidable than before…"[39]

For Nolan and like-minded officers, therefore, the greatest obstacle to the efficiency of European cavalry on campaign was the lack of pace and rapid

37 Brent Nosworthy, *The Anatomy of Victory, Battle Tactics 1689-1763*. New York: Hippocrene Books, 1990; 163-181. Nosworthy, *Battle Tactics of Napoleon and his Enemies*, 277-280.

38 Nolan, *Cavalry*, 91-94.

39 Nolan, *Cavalry*, 301.

Juliusz Kossak, *3th Regiment of Austrian-Hungarian Uhlans under the col. Rodakowski attacks Italian Bersaglierii during the Battle of Custozza in 1866*

exhaustion caused by the excessive weight troop horses were required to carry. This was most obvious in the heavy regiments, but it was true across all branches of the cavalry. The desire to create an impressive spectacle on the parade ground led to the recruitment of unsuitably large troopers. The British example was typical. Field-Marshal Sir Evelyn Wood recalled that, even after the lessons of the Crimea, regimental commanding officers had "a mania for tall men."[40] The British army did, eventually, manage modest reform of most of their line cavalry regiments in this regard. By 1869 the average dragoon weighed about 11 ½ stone (73kg), the average lancer about 11 stone (70kg) and the average hussar 10 stone 3 lbs (64kg). In the early twentieth century, weight limits were set for cavalry recruits: 10st 7 lbs (67kg) for men under 20 years of age and 11 stone for those older. Troop horses averaged 15 ½ hands. Continental cavalry tended to maintain a more pronounced distinction between heavies and lighter

40 Sir Evelyn Wood, "British Cavalry 1853-1903," *The Cavalry Journal* [UK], 1, 1906, 150. Tylden, "The Army Horse," *Journal of the Society for Army Historical Research*, 21, 1942, 49.

cavalry, both in terms of weight and tactical employment, into the twentieth century.[41]

In addition to the rider, the weight of their dress, arms, accoutrements, ammunition, saddlery, water and rations, amounted to a further 110 lbs (50kg). This meant that the horses of dragoon regiments typically carried in excess of 19 stone (121 kg), horses in lancer regiments about 18 stone 10 lbs (119kg), and the mounts of the light hussar regiments 18 stone (114kg). The Household Cavalry, and the cuirassiers and carabineers of continental armies, recruited particularly large men, weighing between 12 and 13 stone (76-83kg), and equipped them with breastplate and helmet. Their unfortunate horses bore a load in excess of 22 stone (140kg). On campaign, when the greatest physical demands were being made on the horses, troopers might be obliged to carry extra fodder or ammunition. Even heavy rain, by soaking the horseman's uniform and thick woollen cloak, could add another 6 to 8 lbs (2.72-3.62 kg) of weight.[42] On campaign, these weights did not simply render cavalry slow, they destroyed its single most important piece of equipment: the horse. When the British Light Brigade had disembarked in Bulgaria in 1854, it had landed 1500 horses. It remained in the Balkans for four months, undertaking just one patrol, remembered as the "sore back reconnaissance" because of the horses' suffering, before being re-embarked for the Crimea. By then it numbered only 1000 sabres, "wastage" having claimed a third of its mounts.[43]

It was the "sore back reconnaissance" rather than the debacle at Balaklava that provoked the sharpest criticism of British light cavalry during and after the conflict. In March 1855 one correspondent to *The Times,* pointed to the manifestly superior performance of Indian cavalry in recent operations in the Deccan. There, one regiment had marched 100 miles in 26 hours and had arrived "ready and fit for service."[44] Similarly, Colonel Elers Napier, a British officer with much experience of irregular horse, suggested that the South African Cape Mounted Rifles "might serve as a model" for a revived British light cavalry

41 H. C. Lowther, "The French Cavalry," *Cavalry Journal,* 4, 1909, 199. Wood, "British Cavalry," 150; Report of Committee on Cavalry Organisation, 1904, *National Archives WO 33/2914.*

42 De La Barre Duparcq, *Elements of Military Art and History,* 120-121; Wolseley, *Soldier's Pocket-Book,* 15; Lowther, "The French Cavalry," 1909, 199.

43 Wood, "British Cavalry 1853-1903," 155. Charles Chenevix Trench, "Horsemanship in History," *History Today*, 20, 1970, 779.

44 Edward Bligh, "What Cavalry Can Do," *The Times*, 20 March, 1855, 12.

arm.[45] This regiment had been first organised in 1827. Its soldiers were lightweights, sparingly equipped, riding small, hardy horses. Their primary arm was a double-barrelled carbine, but they also carried a sword and were quite capable of fighting as conventional cavalry. At the Battle of Gwanga River, 7 June 1846, they charged alongside the 7th Dragoon Guards, using their carbines from the saddle.[46]

One characteristic of such colonial mounted rifle units (and the extemporised mounted infantry columns that served in India during the rebellion of 1857-59) was their combination of mobility with a capacity to fight effectively on foot. At this point, most European officers felt that it was impossible to train a trooper to fight effectively both from the saddle and on foot. Jomini argued for raising mounted infantry units, because he thought "to make cavalry out of foot-soldiers, or a soldier who is equally good on horse or on foot, is very difficult."[47] Nolan thought that cavalrymen should strictly limit their dismounted action to "covering a retreat, defending defiles and passes against cavalry, and in pushing forward to seize bridges and dismounting to maintain them."[48] In Britain, therefore, in 1859-60, there developed a vogue for raising units of Mounted Rifle Volunteers, highly mobile formations who rode cross country like "well mounted hunting men," but fought on foot, "as infantry skirmishers."[49]

In the latter decades of the century, a debate arose over whether such units of mounted riflemen (well-mounted, with high standards of horsemanship) or mounted infantry (indifferently mounted, and usually extemporised), should, wholly or partially, supplant conventional cavalry. Reform-minded cavalry officers, such as the British hussar Captain F. Chenevix Trench, sought a dual capacity for existing regiments, to be equipped with both modern rifles and *l'arme blanche*. He argued that "in future the cavalry soldier must be very much of a hybrid animal, and must be trained and able to do a great deal of his fighting on

45 Elers Napier, "Our Light Cavalry," *The Times*, March 29, 1855, 6.

46 Marquess of Anglesey, *A History of British Cavalry*, 3, 1872-1898, London: Leo Cooper, 1982, 171-174. G. Tlyden, "The Cape Mounted Riflemen, 1827-1870," *Journal of the Society for Army Historical Research*, 17, 1938, 227-231.

47 De Jomini, *The Art of War,* 308-309.

48 Nolan, *Cavalry*, 65-66.

49 Godfrey Brennan, "The Light Horse and Mounted Rifle Volunteer Corps", *Journal of the Society for Army Historical Research*, 21, 1942, 3-16. Henry Havelock, *Three Main Military Questions of the Day.* London: Longman, 1867, 65. "Elcho", "Rifle Cavalry." *The Times*, 27 June 1877. 4.

foot and to do it well."[50] Opponents, such as G.T. Denison, insisted that such a "hybrid" was impossible, and pointed to the historical example of dragoon regiments. These had originally been raised to fight on horseback and foot but had generally performed poorly in the latter role. For Denison, two separate service branches were required. These would be mounted rifles, who fought dismounted, and replaced the light cavalry. Alongside these, a small proportion of heavies, armed only with revolvers and sabres, would be retained, for those rare and fleeting opportunities for "shock."[51] Chenevix Trench's "hybrid" concept was finally vindicated in World War 1, most notably in Palestine.[52] In Europe's wars of the 1850s and 60s, however, the cavalry revival had yet to deliver such tactical flexibility.

In the Italian war of 1859, few lessons could be drawn because the rival cavalries were handled so poorly. At Solferino, 24 June, the French and Austrian armies collided unexpectedly whilst on the march, despite fielding some 25,000 horsemen between them. Tactical lessons were unclear. At Montebello, 20 May, the Sardinian Novara Chevaux Légers charged six times, but lost half their number. Many, indeed, fell to rifles but also to counter-charges by Austrian hussars. One very depleted squadron of Piedmontese lancers overran a square of Austrian infantry, but every rider was a casualty. At Solferino, once the rival cavalries had bestirred themselves to action, a number of charges were made. For the most part these involved clashes of bodies of horse, although fast-moving French Chasseurs d'Afrique broke one infantry square which had not quite completed its formation.[53] Overall, the cavalry arm had failed to make much impression. Rightly or wrongly, in some quarters this reenforced the sense of the arm's impotence. Thus, in the aftermath of the war, the Austrians substantially reduced their cavalry arm. They (and the Russians) also abandoned the cuirass at this point.[54]

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50 Chenevix Trench, "On the Progress that has been Made during Recent Years in Developing the Capabilities of Cavalry," *RUSI*, 21, 1877, 1007.

51 Denison, *History of Cavalry*, 420-437.

52 See Stephen Badsey, *Doctrine and Reform in the British Cavalry, 1880-1918*. Aldershot: Ashgate, 2008; Jean Bou, *Light Horse: A History of Australia's Mounted Arm.* Cambridge: Cambridge University Press, 2010; David R. Dorondo, *Riders of the Apocalypse: German Cavalry and Modern Warfare.* Annapolis: Naval Institute Press, 2012.

53 Anon., *A German Account of the Italian Campaign, 1859*. Solihull: Helion, 2002, 6; Major Graves, "The Functions of Cavalry in Modern War," *RUSI* 19, 1885, 6; Denison, 353.

54 Anon. "Sixty Years of the Austro-Hungarian Cavalry." *Cavalry Journal* [UK], 4, 1909, 244-245; Denison, 351. Gunther Rothenberg, *The Army of Francis Joseph.* West Lafayette: Purdue University Press, 1976, 63.

To a degree, many of the same problems were evident again in the Austro-Prussian War of 1866. It was not really rifles that held the mounted arm in check but "the idea of a Reserve Cavalry."[55] This notion of retaining a mass of cavalry to strike the final blow against a reeling enemy was common to both sides, so little attempt was made to use cavalry during the opening stages of the campaign, or to try to influence the direction of major engagements once they were under way. The Prussian tactician Prince Kraft would bemoan this tendency, "this name Reserve Cavalry was a very unfortunate expression. It is hard to believe that a mere word could have such influence. And yet it had."[56] Thus, reconnaissance was largely performed indifferently; "strategic" use of cavalry was not attempted; battlefields were dominated by infantry and artillery.

Yet there were a number of tactical engagements that once again suggested what cavalry might still achieve. During the opening phases of the battle of Königgrätz, 3 July 1866, the 3rd Battalion of the 51st Hungarian Regiment had been caught by surprise emerging from woods by a bold squadron of the 10th Magdeburg Hussars. Although only numbering 130 sabres, the hussars had captured 681 men and the Hungarians' colours.[57] In the final stages of the battle, the victorious Prussians had failed to prevent the orderly withdrawal of the Austrian forces because of a rear-guard action by Austrian cavalry and supporting batteries. This costly but successful example became a model for the combined action of the horse-mobile arms. On 14 July, at Tobitschau, three squadrons of the Prussian 5th Cuirassiers, under Major William Adalbert von Bredow, attacked Austrian batteries in position and took eighteen guns. The speed of their approach had frustrated the gunners' aim and the cuirassiers suffered only around ten casualties.[58]

The most spectacular evidence for a revived cavalry arm, however, came at Custozza, 24 June 1866, on the Venetian front. There, two Austrian cavalry brigades, a total of around 2400 sabres, had played a pivotal role in preventing the advance of two Italian infantry divisions, totalling some 25000 rifles. Operating in small, handy formations and exploiting the cover of broken and wooded ter-

55 Prince Kraft Zu Hohenlohe-Ingelflingen, *Letters on Cavalry*. London: Edward Stanford, 1889, 12.

56 Prince Kraft, *Letters on Cavalry*, 13.

57 Wood, *Achievements of Cavalry*, 163-174. Prince Kraft, *Letters on Cavalry,* 62.

58 Robert Home, *A Précis of Modern Tactics.* London: HMSO, 1892, 72-73. E.S. May, "The Action of Cavalry and Horse Artillery Illustrated by Modern Battles," *RUSI*, 38, 1894, 15-16; Wood, *Achievements of Cavalry*, 177-190.

rain (traditionally considered poor cavalry country), the Austrians had charged repeatedly. Some of these actions resulted in heavy casualties, but they forced the Italian infantry to halt and deploy, thus achieving their tactical objective. With effective fields of fire limited by cover, the steadier riflemen had relied on traditional tactics: volleys from close order formations, or positions behind obstacles such as walls, at short range. In other instances, the infantry gave way. Early in the morning, a squadron of Austrian lancers caught Italian infantry in column; four out of five battalions fled. This was evidence to counter those who "would condemn large masses of cavalry to impotence," and a reminder that "the indefinite improvements in firearms" had yet to eclipse the human dimension of the battlefield. A French officer wrote of the Austrian troopers' achievement, "the moral effect, the shock, produced by their impetuous charge was such that the whole Corps was disorganised and paralysed for the rest of the day."[59]

The Prussian cavalry, long at the forefront of the revival, learned important lessons in advance of the war with France, 1870-71. However, this development has been largely obscured historiographically by the disasters which overcame French cavalry during that conflict. These have served to reenforce the notion of the arm's obsolescence. Yet, once again, the root of those disasters was that the cavalry was badly led. French reconnaissance was poor; strategic operations neglected. The idea of the "reserve" continued to afflict the French; their regulations "prescribed that the place of the cavalry in the column of march was in rear of the infantry."[60]

When the French cavalry was committed to combat, it was generally mishandled. At Wörth, 6 August 1870, cuirassiers and lancers were thrown into the field to stem the Prussian advance without local reconnaissance. Pitched into ditches or caught in hop-fields, vineyards and village streets, milling formations of horsemen were subject to murderous fire.[61] This practice of throwing masses of cavalry into combat in a futile effort to retrieve a lost battle was most evident at Sedan, 1 September 1870. There, a French army of 120,000 men under Patrice MacMahon had been encircled by Prussian forces totalling

59 H. R. Gall, *Modern Tactics.* London: W.H. Allen, 1890, 311-312. Wood, *Achievements of Cavalry*, 141-160.

60 Chenevix Trench, *Cavalry*, 92.

61 Jean Jacques Théophile Bonie, *Cavalry Studies from Two Great Wars*, edited by Arthur L. Wagner, Kansas City: Hudson-Kimberly, 1896, 21-31. Prince Kraft, *Letters on Cavalry*, 64-65. Home*, A Précis of Modern Tactics,* 62.

Aimé Morot, *Rezonville, 16 August 1870, La Charge des Cuirassiers*

some 250,000 men. In desperation, the French cavalry was repeatedly hurled against positions manned by confident infantry and supported by 500 modern rifled, breech-loading artillery pieces. Nothing was achieved aside the destruction of some fine regiments. Archibald Forbes, an English war correspondent and ex-dragoon, witnessed the charge of the Chasseurs d'Afrique. They rode into a storm of artillery and rifle fire delivered at close range: "When [the smoke] blew away there was visible a line of bright uniforms and grey horses struggling prostrate among the potato drills, or lying still in death… So thorough a destruction by what may be called a single volley probably the oldest soldier now alive never witnessed."[62]

While the handling of Prussian cavalry was not always perfect, its overall performance offered a striking contrast to the French and underscored the progress made during the cavalry revival, leavened by recent experiences in the field. Effective performance of field duties by German light cavalry - screening, reconnaissance, cutting communications lines - had commenced at the very opening of the campaign. Individual officers undertook daring long-range patrols; a Lieutenant von Ziegler of the Uhlans of the Guard, covered nearly 90 miles in a single day. The uhlans (lancers) soon became a ubiquitous reminder that the war

62 Archibald Forbes, *My Experiences of the War between France and Germany*. Vol.1. London: Hurst and Blackett, 1871, 235-236.

was going badly for France. A German gunner described how they "swarmed around the enemy's columns on the march, just as bees swarm out of their hives against an intruder." Harassed companies and sections would break away from the columns to fire volleys at the uhlans, who would quickly fall back to avoid the fire, and then come on again. The result of all this was "indescribable fatigue" for the weary French infantry.[63] French dragoon Théophile Bonie was chagrined to note of the uhlans, "they even pushed their audacity so far as to dismount and enter the inns." Bonie's command struggled to respond, "every day the same thing - like an irritating fly, that is driven off only to return the next moment - the enemy's cavalry could not be laid hold of."[64]

While it was the dash, initiative, and confidence in the staying power of their horses displayed by the light cavalry in field duties that had the profoundest impact on the overall campaign, the Prussian cavalry of all branches also made significant tactical contributions on the battlefield. In some instances, masses of regiments would clash in engagements of a scale and ferocity not witnessed since the Napoleonic Wars. Bonie recalled one clash at Rezonville/Mars-la-Tour, 16 August 1870, as "a kind of furious mêlée or whirlpool in which 6000 cavalry soldiers, dressed in all sorts of uniforms, armed in every conceivable manner, were killing each other as fast as they could..." These clashes provided some vindication for those who argued for the retention of separate branches of cavalry and conventional close-order formations for shock: Bonie recalled that "the horses of our light cavalry were knocked to pieces against the solid and impassable line formed by the German dragoons." The vulnerable Prussian left flank was thus secured and the battle of Mars-la-Tour brought to a victorious conclusion.[65]

Rezonville/Mars-la-Tour is often best remembered for a heavy cavalry action against infantry and batteries: the so-called *Todtenritt* (death ride) undertaken by General William Adalbert von Bredow's 12th Brigade, 750 sabres of the 7th Magdeburg Cuirassiers and 16th Altmark Uhlans. With Prussian infantry near Vionville wavering under a French bombardment, 12th Brigade was ordered to silence the batteries and drive back their supporting infantry. Von Bredow applied all the tactical lessons that marked the cavalry revival. He plotted his approach march carefully, exploiting cover to minimise casualties from artillery.

63 Prince Kraft, *Letters on Cavalry*, 42-43.

64 Bonie, *Cavalry Studies from Two Great Wars*, 15-16.

65 Bonie, *Cavalry Studies from Two Great Wars,* 58, 62; Helmuth von Moltke, *The Franco-German War of 1870-71*: London: Harper & Brothers, 1907, 44.

His own horse batteries laid down suppressive fire on the French guns, as the squadrons rode forward. Their mounts had been maintained in good condition, trotting for 1500 yards (1372m) in column, then deploying into line formation, for the last 1800 yards (1646m) of their advance. They gathered pace as they closed on the French positions; gunners and infantry armed with Chassepot bolt-action rifles and *mitrailleuse* machine-guns struggled to adjust their sights. Most of their fire went high. The torrent of horsemen swept away six batteries, scattered four battalions, and brought the advance of an entire corps to a halt. Only a counterattack by 23 squadrons of French cavalry finally checked the Prussian heavies, lances and sabres inflicting severe casualties on von Bredow's men and their exhausted mounts.[66]

Rezonville was exceptional for the scale and intensity of its cavalry fighting. Yet further opportunities did sometimes arise for shock action. German cavalry in the northern theatre charged on at least sixteen further occasions. Twelve of these attacks were completely successful; most were delivered by bodies consisting of two squadrons or less.[67] These actions seem to have made a particular impression upon von Moltke, who concluded that "because in modern warfare the long range and destructive fire of artillery necessitates a scattered formation, there will be more frequent opportunities for those brilliant dashes of small bodies of cavalry, in which, by taking advantage of the critical moment, they have so often distinguished themselves."[68] Even Albrecht von Boguslawski, an infantry tactician who thought too much cavalry had been deployed to France and who favoured raising Mounted Infantry, acknowledged this: "the possibility of success against infantry [armed with modern rifles] is thereby proved, and will scarcely be denied by anyone who has a right idea of the vicissitudes of a hard fought battle."[69] Cavalry, it transpired, could charge infantry after all.

Yet the outstanding contribution of the cavalry revival to Prussia's victory was in field duties. They had excelled in reconnaissance and screening. French armies had stumbled myopically through operations in ignorance of their enemy's whereabouts but with each step of their own marches observed and reported. German infantry had marched and bivouacked in security, largely spared

66 Prince Kraft, *Letters on Cavalry*, 24-25; Wood, *Achievements of Cavalry*, 224-238; "The German Cavalry at Vionville," in Wagner (ed), *Cavalry Studies*, 167-177.

67 C. Barter, "German Divisional Cavalry," *RUSI*, 36, 1892, 1180

68 Quoted in Home, *Modern Tactics.* 59-60.

69 Albrecht von Boguslawski, *Tactical Deductions from the War of 1870-1871.* Minneapolis, Absinthe Press Reprint, 1996, 75.

from the wearisome tasks of outpost work and patrols. French troops, all too often, awoke to the scream of incoming shells or the sound of galloping uhlans' hooves. Consequently, the German infantry remained fresher than their French counterparts. Between the 3 August and 19 September 1870, the Prussian Guard Corps covered 540 miles, spending only 4 days at rest, and fighting three major battles. French infantry, in contrast, had crawled across country, barely making 9 miles on a good day, whilst the ubiquitous uhlans harassed the vulnerable columns of marching men. Thus, both the paralysis which beset French armies and the activity which characterised their Prussian opponents can be seen, in large measure, to be functions of the relative efficiency of their respective cavalry arms.[70]

The European cavalry revival remained unfinished business in 1871. Most regiments still overburdened their horses. The full potential of "strategic cavalry," as demonstrated by the Army of the Potomac's Cavalry Corps in the final stages of the American Civil War, had not been realised. The debate over dismounted action was just beginning to stir. And the onward march of weapons technologies - quick firing artillery, smokeless powder, magazine fed bolt-action rifles, automatic weapons - soon sparked renewed debate about cavalry's survival on the modern battlefield. Yet the achievements of the Prussian cavalry in 1870-71 made it possible to argue, with much force and evidence, that the arm remained viable, had adapted to meet new challenges and could do so again. The history of the cavalry revival is, thus, a timely warning against assuming that innovative weapons augur tactical revolutions, be that weapon a Dreyse needle-gun or, for that matter, a drone.

70 Prince Kraft, *Letters on Cavalry*, 49-50.

Cavalry and the Firepower Revolution 1860-1945

Stephen Badsey

In June 2009, General Sir David Richards, the professional head of the British Army, gave a major policy speech identifying a technological transformation in land warfare: "I for one believe that our generation is in the midst of a paradigm shift, is facing its own 'horse and tank' moment if you like, born in our case chiefly but not exclusively of the global revolution in communications and associated technology".[1] The distinguished general's reference was to the impact of the later stages of the firepower revolution on the future of horsed cavalry, the period from 1914 to 1945 in which scouting aircraft, armoured cars and tanks began to provide a viable alternative to cavalry. While full mechanization was clearly only a matter of time and resources, this "moment" would last for rather more than 30 years. Although all belligerents entered the Second World War in the process of replacing cavalry with tanks, the world's first completely motorized and mechanized army was the British Army's new BEF in 1940,[2] and the first campaign fought entirely without horses and mules on either side was the Western Desert campaign in 1940-42. In 1945 the Soviet Army still had 26

1 "CGS General Sir David Richards in his own words," Royal United Services Institute (RUSI) website: https://rusi.org/explore-our-research/publications/commentary/cgs-general-sir-david-richards-his-own-words. General Richards as Chief of the General Staff and future Chief of the Defence Staff was addressing the 2009 Land Warfare Conference at the RUSI, London.

2 The distinction between mechanization, meaning armoured vehicles but including aircraft, and motorization meaning wheeled vehicles, was made in British military thought in the 1920s, and is taken from Roger Salmon, *"Everything Worked Like Clockwork…" The Mechanization of British Regular and Household Cavalry 1918-1942*, Solihull: Helion, 2016, vii-viii. Names and dates of wars, campaigns and battles are taken from authoritative sources such as R. Ernest Dupuy and Trevor Dupuy, *The Encyclopedia of Military History from 3500 B.C. to the Present*, London: Military Book Society, 1970, and Melvin Small and J. David Singer, *Resort to Arms: International and Civil Wars 1816-1980*, Beverly Hills: Sage, 1982.

cavalry divisions active in combat on the Eastern Front.[3]

The belief that technology transforms warfare in a relatively short time frame reflects the continuing strength in modern military thought of the reductionist theory of technological determinism, an important feature of the cavalry and firepower debate. Technological determinism in warfare largely came to prominence in the American Civil War, although a comparison with the German Wars of Unification, fought with equivalent technology including firearms in a much different political and social context, suggests that the rival approach of social constructionism should be given more consideration. The technological determinist narrative remains a powerful one for military historians, including the view that horsed cavalry were a rural anachronism in an age of industrialisation.[4] Some decades before cultural studies made its impact on the study of warfare, military historians also adopted a cultural narrative for the cavalry debate, that of enlightened reformers being obstructed by unthinking cavalry officers who were motivated by an emotional attachment to horses, and to their regiments as institutions. This narrative originated with numerous military reformers who were critical of the cavalry. In 1905 the reforming French General Oscar de Négrier complained that "for the ancient school putting a foot on the ground is downfall. It sees in horsemanship an aim whereas it is only a means".[5] Mechanization did not change this: a judgement from the 1930s repeatedly quoted by the British tank advocate Basil Liddell Hart was that "A love of the horse and of hunting seems to blunt all their reasoning faculties".[6]

The firepower revolution and cavalry debate also reflects Amara's Law: that the effects of a given technology are overestimated in the short term but underestimated in the long term.[7] The course of events may be conveniently divided

3 R.L. DiNardo, *Mechanized Juggernaut or Military Anachronism? Horses and the German Army of World War II*, Mechanicsburg: Stackpole, 1991, 127-33; Walter S. Dunn Jr., *The Soviet Economy and the Red Army, 1930–1945*, Westport: Praeger, 1995, 225.

4 E.g. Geoffrey Wavro, *Warfare and Society in Europe 1792-1914*, Abingdon: Routledge, 2000; Peter Browning, *The Changing Nature of Warfare: The Development of Land Warfare from 1792 to 1945*, Cambridge: Cambridge University Press, 2002; Robert M. Citino, *The German Way of War: From the Thirty Years War to the Third Reich*, Lawrence: University Press of Kansas, 2005.

5 General [Oscar] de Négrier, *Revue des Deux Mondes*, Series 1, 1905, 306.

6 Captain B. H. Liddell Hart, 'Horse, Foot – and Tank,' *The Spectator*, 28 September 1956, 12-13; B.H. Liddell Hart, *The Memoirs of Captain Liddell Hart, Volume I*, London: Cassell, 1965, 242.

7 Amara's Law is attributed to the American futurologist Roy Amara in the 1960s; see https://thevirtulab.com/what-is-amaras-law/.

into three main phases. In the first of these, dating from before 1860, critics of charging tactics claiming "the logic of facts"[8] used simplistic mathematical models to assert that infantry in linear formation with rifled muskets or early breechloaders would inevitably wipe out charging cavalry. These claims failed to reflect actual battle experience, while modern research has put the rifled musket's firepower at only a small fraction of what was claimed. The second phase, starting in the 1880s, saw a much steeper increase in firepower, with the appearance of magazine rifles, and greatly improved artillery and machineguns. In this phase the debate over cavalry became institutionalised, with the acceptance by all major powers, and some of the rising powers including Italy and Japan, that fighting dismounted with carbines and rifles would form at least part of their cavalry doctrine. Cavalry also enjoyed a revival, partly through their value in colonial war.[9] The final phase with the onset of mechanization marked the true obsolescence of cavalry, although by continuing to embrace new tactics and weapons they remained effective for much longer than first expected; it is remarkable how many episodes have been wrongly claimed as "the last cavalry charge".

This story has been well described by revisionist historians, at least as far as 1918, but this has had only limited impact on the technological determinist narrative, or the narrative of culturally driven cavalry obstinacy. The purpose of this present chapter is therefore to summarise the revisionist position for a wider readership, to follow the cavalry and firepower story up to the Second World War, to place the various disagreements about cavalry within wider national strategies, and to relate all this to both contemporary and present day military thought.

* * *

It is a commonplace that military officers seek evidence from history to illuminate contemporary problems and provide support for their own views. But one unexpected finding from the cavalry and firepower debate is that this also happens in reverse, with some historians allowing contemporary military thought to over-influence their researches. In 1910, a British mediaevalist de-

8 Quotation from Baron Léopold d'Azémar, Colonel of the 6th Lancers, quoted in "The Future of Cavalry," *United Service Magazine*, 1861 Part II, 569-75; Earl J. Hess, *The Rifle Musket in Civil War Combat, Reality and Myth,* Lawrence: University of Kansas Press, 2008, 100-15.

9 Gervase Phillips, "'Who Shall Say That the Days of Cavalry Are Over?' The Revival of the Mounted Arms in Europe 1853-1914," *War in History*, Vol. 18 No. 1 (January 2011), 5-32.

scribed Anglo-Saxon horsemen fighting on foot as "mounted infantry", a term that was familiar to him from the Boer War but had no Anglo-Saxon equivalent; and this led more than a generation of scholars to mistakenly interpret dismounted Anglo-Saxons at the Battle of Hastings in 1066 as being inferior to Norman knights in societal as well as military terms.[10] A greater problem for present day historians is the dominance of the military doctrine of Maneuver War or "maneuverism," adopted by the US Army in the 1980s and demonstrated in the Gulf War 1990-91.[11] Maneuver war is often described as modern Blitzkrieg, stressing the importance of German Auftragstaktik (anglicised as "mission command"), meaning independent thinking by commanders; although Blitzkrieg was never an official German doctrinal term, and both its validity and the accuracy of the American interpretation of Auftragstaktik have been challenged.[12] Maneuver War also emphasises skill in a level of command lying between battlefield tactics and strategy, identified by the 19th century military thinker Baron Henri Jomini as "grand tactics," and developed further in early Soviet military thought as "Operational Art".[13] Maneuverist thought is further deeply influenced by the related Soviet concept of "Deep Battle," or "Deep Operations". The obvious connection between this and the cavalry and firepower debate is that an emphasis on speed and independent decision making was the hallmark of 19th century cavalry. A further connection is that Maneuver War's emphasis on new technology and precision strike has led to its being characterised as a "revolution in military affairs" or RMA, a controversial term first used in early Soviet military thought to describe the industrialised warfare of the First World War, and popularised since the 1980s by technologically determinist historians to describe other major changes in the warfare of the past, including the firepower revolution.[14] In the process, Maneuver War with its associated ideas has become

10 J. H. Clapham, "The Horsing of the Danes," *English Historical Review*, Vol. 25, No. 98 (April 1910) 287-93.

11 Stephen Badsey, "The Doctrines of the Coalition Forces," in John Pimlott and Stephen Badsey (eds) *The Gulf War Assessed*, London: Arms and Armour, 1992, 57-80.

12 J.P Harris, "The Myth of Blitzkrieg," *War in History*, Vol. 2 No. 3 (November 1995) 335-52; Adam Tooze, *The Wages of Destruction: the Making and Breaking of the Nazi Economy*, London: Penguin, [2006] 2007, 429-485; Robert Leonard, *The Art of Maneuver: Maneuver-Warfare Theory and Airland Battle*, Novato: Presidio, 1991, 3-128; Martin van Creveld, *Fighting Power: German and U.S. Army Performance 1939-1945*, New York: Praeger, 1982.

13 For a discussion of this see the contributions of Stephen Badsey, Donald Stoker and Joseph G. Dawson III, "Forum II: Confederate Military Strategy in the U.S. Civil War Revisited," *The Journal of Military History*, Vol. 73 No. 4 (October 2009) 1273-88.

14 Colin S. Gray, *Modern Strategy*, Oxford: Oxford University Press, 1999, 200-5 and 243-

an absolute standard for some theorists and historians, with contradictory results. While early 20th century cavalry-led successes have been praised as being forerunners of maneuverism, particularly the British victory over the Ottoman forces at the Battle of Megiddo in September 1918,[15] South African forces in the Western Desert campaign have been praised as superior at armoured warfare to the British, because they inherited maneuverism and mission command from their ancestors the Boer commandos, a light cavalry citizen militia who habitually dismounted to fight.[16] The ideas and vocabulary of maneuverism have even affected recent interpretations of the campaigns of Genghis Khan and the war chariots of the Ancient Britons,[17] although it is a revealing parallel that Liddell Hart also claimed Genghis Khan and Ancient British war chariots as precedents for his own ideas about warfare and tanks.[18]

* * *

In 1838, Jomini summarised the Napoleonic paradigm for cavalry: they should constitute between 10 and 15 percent of an army, their sole battlefield role was to charge mounted in close order, although against artillery and infantry squares only when supported by fire from their own artillery and infantry. The deciding factor, rather than tactics or weapons, was "The quickness of eye and the coolness of the commander, and the intelligence and bravery of the soldier". Cavalry could not take and hold ground by themselves, lances were

54; David Jordan et al., *Understanding Modern Warfare*, Cambridge: Cambridge University Press, 2016, 101-58.

15 E.g. Paul A. Povlock, "Deep Battle in World War One: The British 1918 Offensive in Palestine," US Naval War College, 13 June 1997; Gregory A. Daddis, "Armageddon's Lost Lessons: Combined Arms Operations in Allenby's Palestine Campaign," Air Command and Staff College, Wright Flyer Paper No. 20, Maxwell Air Force Base, Alabama: Air University Press, 2005; John Alexander, "A New Type of Warfare: Re-Examining Megiddo as an Air-Land Battle," RAF Centre for Air and Space Power Studies, 19 September 2018, https://medium.com/raf-caps/a-new-type-of-warfare-re-examining-megiddo-as-an-air-land-battle-33faa53c1062.

16 David Brock Katz, *South Africans versus Rommel: the Untold Story of the Desert War in World War II*, Johannesburg: Delta Books, 2018, 61-89.

17 Joe E. Ramirez Jr., "Genghis Khan and Maneuver Warfare," US Army War College, April 2000, https://archive.org/details/DTIC_ADA378208; Carl Meredith Bradley, "The British War Chariot: A Case for Indirect Warfare," *The Journal of Military History*, Vol. 73, No. 4 (October 2009) 1073-91.

18 B.H. Liddell Hart, *The Tanks: The History of the Royal Tank Regiment and its Predecessors*, London: Cassell, 1959, Vol. I, 4-6; John J. Mearscheimer, *Liddell Hart and the Weight of History*, Ithica: Cornell University Press, 1988, 95-7.

the best attacking weapon, and cuirasses the best defensive armour; dismounted fighting with firearms as well as charging mounted should be left in western armies to "those amphibious animals called dragoons," although Ottoman and Circassian cavalry could fight well both mounted and dismounted.[19] Fewer than thirty years after Jomini wrote, under the impact of the firepower revolution, in the American Civil War and Austro-Prussian War close order battlefield charges and the use of infantry squares to repel them had become very rare, and in the Franco-Prussian War they were considered obsolete, although the use of larger squares continued in colonial warfare to the end of the 19th century.[20] On the eve of the First World War, the best reformed cavalry, by then that of Britain and its empire, could both take and hold ground, could fight with rifles on foot as well as the best infantry, and could also charge mounted effectively in co-operation with machineguns and artillery.[21] But in most armies the cavalry still adhered to some extent to the Napoleonic paradigm, including a few cuirassier regiments in the French, German and Russian armies of 1914.

One of the most difficult aspects of the cavalry debate, both for contemporaries and historians, is that for decades after the first pronouncements of cavalry obsolescence a proportion of cavalry charges continued to succeed. This was so startling as to invite automatic rejection, and still does from some historians. In 1910 the British Field Marshal Lord Roberts, a cavalry reformer but an opponent of charging tactics, tried to argue away a successful mass charge in open order, made by a British cavalry division at the Battle of Klip Drift in February 1900, as "It was an ideal Cavalry operation, but it was not a 'Cavalry charge' as the term is generally understood".[22] Mass charges on the scale of the Napoleonic Wars did increasingly become a rarity after 1860, but were replaced by combining charges of at most a few hundred cavalry with supporting firepower, which continued to succeed even under the most unpromising conditions. On the Western Front in the First World War the British, Canadian, and Indian cavalry made at least 20 successful charges of this kind between 1915 and the end

19 Antoine Henri de Jomini *The Art of War,* Translated by G. H. Mendell and W. P. Graihill, Philadelphia: Lippincott, [1838] 1862, 303-315, quotations from 308 and 312.

20 C.E. Callwell, *Small Wars: Their Principles and Practice*, London: Greenhill, [1906] 1990, 256-76.

21 Stephen Badsey, *Doctrine and Reform in the British Cavalry 1880-1918*, London: Ashgate, 2008, 191-302.

22 Lord [Frederick] Roberts, preface to Erskine Childers, *War and the Arme Blanche*. London: Edward Arnold, 1910, ix.

of the war.[23] Why any given cavalry charge succeeded or failed appears to have been highly dependent upon contingent circumstances, and many of those that succeeded suffered heavy casualties, but since the appropriate techniques for analysing combat were only developed late in the Second World War, even the basic facts about many charges remain conjectural. A late but typically controversial example took place at Izbushensky on the Eastern Front in August 1942, when an Italian cavalry regiment supported by its Volóire ("flying batteries") artillery successfully charged a Soviet infantry regiment.[24]

It has been accurately pointed out that for cavalry "the charge" connoted not simply a tactic but an entire way of life, for which élan and panache, or for the British "cavalry spirit," were essential.[25] The downside of cavalry spirit was that most critics took it for granted that cavalry could never overcome the centrality of the charge to their thinking, and could not learn to fight dismounted effectively. Cavalry spirit had many similarities with German Auftragstaktik; the independence of mind expected of British cavalry officers is conveyed by a description of charging doctrine when fighting Ottoman troops in August 1917, "There was considerable divergence of opinion in the cavalry as to the best method to be employed in the mounted attack [so] brigadiers had been given a free hand to develop the tactics they favoured, subject to the principle that fire support should always be provided if available".[26] Charging was also so fundamental to the cavalry's identity that suggesting that swords and lances were obsolete was taken as an open threat to disband cavalry regiments. Later in the 20th century the same attitudes were shown by fighter pilots, and there are further parallels with Second World War paratroopers, who fought mostly as conventional infantry, but saw parachuting as essential to their identity as soldiers. The desire to poke fun at the arrogant sense of invulnerability which was essential for cavalry officers also long predated the firepower revolution. Not even Carl von Clausewitz could resist it, qualifying his view that swift decision and determination in an officer meant military genius by writing that "The statement may surprise the reader who knows some determined cavalry officers who are little given to deep

23 David Kenyon, *Horsemen in No Man's Land: British Cavalry and Trench Warfare 1914-1918*, Barnsley: Pen and Sword, 2011, 231-45.

24 For one account see Janusz Piekalkiewicz, *The Cavalry of World War II*, London: Orbis, 1979, 216-18.

25 Brian Bond, "Doctrine and training in the British Cavalry 1870-1914," in Michael Howard (ed.), *The Theory and Practice of War: Essays Presented to Captain B.H. Liddell Hart on His Seventieth Birthday*, London: Cassell, 1965, 99.

26 R.M.P. Preston, *The Desert Mounted Corps*, London: Constable, 1921, 55-6.

thought".[27] It was an often repeated joke that one cavalry officer was so stupid that even his fellow officers noticed, and many officers fitted the stereotype. Rather than seeking common cause with the intelligent reformers who also existed in every country's cavalry, most critics demanded complete acceptance of their own ideas, and ridiculed any other viewpoint. Both the theme and tone are remarkably consistent, from the jibe by a reformer in 1867 that lancers carrying a "flag and pole" were "a glorious anachronism borrowed from the Middle Ages," to Sir Ian Hamilton, a prominent British opponent of the cavalry, in 1903 comparing the sword or lance to "a mediaeval toy," to a tank commander in 1917 sneering at "our mediaeval horse soldiers".[28] A few were quite prepared to distort recent history in pursuit of their aims, including the British tank pioneer Lieutenant Colonel J.F.C. Fuller, who wrote in 1920 of the Boer War that it was "a rifle war pure and simple, the *arme blanche* plays practically no part in it," whereas that war had included a number of successful charges.[29] This deliberately provocative language should have long ago forced a re-evaluation of the claims that opponents of the cavalry represented the rational and reasonable side of the argument.

In all European writings, the term "arme blanche" as used by Fuller (approximating to "cold steel" in English) meant swords and lances used in mounted cavalry combat. A surprisingly large part of the debate was devoted to the arme blanche when compared to pistols, carbines, and rifles. This focus has obscured the fact that cavalry mobility, speed and endurance depended entirely on horse supply, fitness and training, and that often this was the more important factor in determining success. It has also obscured the more fundamental consequences of the firepower revolution: the removal of cavalry as the battlefield arm of attack and exploitation took away the Napoleonic synergy between the three arms, progressively weakening the effectiveness of infantry and artillery attacks, and so leading to battles becoming less decisive, and eventually to the

27 Carl von Clausewitz, *On War*, Translated by Michael Howard and Peter Paret, Princeton: Princeton University Press, [1832] 1976, 103.

28 Henry Havelock, *Three Main Military Questions of the Day*, London: N.P., 1867, 38; Spencer Jones, *From Boer War to World War: Tactical Reform of the British Army, 1902-1914*, Norman: University of Oklahoma Press, 2012, 177; Robert Woolcombe, *The First Tank Battle: Cambrai 1917*, London: Arthur Barker, 1967, 84-5.

29 J.F.C. Fuller, "The Influence of Tanks on Cavalry Tactics – Part I," *The Cavalry Journal* [UK], Vol. 10 No. 36 (April 1920) 109-32, italics in the original; Stephen Badsey, "The Boer War (1899-1902) and British Cavalry Doctrine: A Re-Evaluation," *The Journal of Military History*, Vol. 71, No. 1, (January 2007), 75-98.

deadlock of the First World War. The choice of weapons was really less important than the arguments it provoked were worth. Firing either pistols or carbines (known as saddle fire) while charging was extremely inaccurate except at point-blank ranges, and there were documented instances of officers choosing not to draw their swords when charging. A charge was understood to be a psychological threat to scare opponents into shooting wildly or running away rather than being ridden down by horses. In the Boer War, rifle-armed British and British Empire horsemen made mounted charges without swords, and in its guerrilla phase some Boer commandos adopted the same tactic. The largest and most successful of these Boer charges was undertaken by about 1,000 horsemen at the Battle of Tweebosch in March 1902; "a magnificent charge" according to a British general captured in it.[30] Like the charge itself, the arme blanche was also understood as a psychological weapon, providing a reason for cavalry to close with the enemy in the same way as an infantry bayonet.[31] In the First World War, the Australian Light Horse made successful charges without swords, including a mass charge to capture Ottoman positions at the Battle of Beersheba in October 1917, leading one Australian division to petition successfully to be given swords before the Battle of Megiddo.[32] As late as 1941, Major General George S. Patton Jr. told the US Army Cavalry Board that "A cold steel weapon is not only desirable but vitally necessary" to intimidate the enemy.[33] Following both the Russian cavalry and Cossacks underperformance in the Russo-Japanese War, despite their high reputation as mounted riflemen, the Russians and Japanese placed considerably greater emphasis on charging with the arme blanche.[34] The Russian cavalry failure also led to rival claims from European cavalry reformers

30 Stephen M. Miller, *Lord Methuen and the British Army: Failure and Redemption in South Africa*, London: Frank Cass, 1999, 225-229, quotation from 229; Fransjohan Pretorius, *Life on Commando During the Anglo-Boer War 1899-1902*, Cape Town: Human and Rousseau, 1999, 144-45. As detailed a study of these charges as was possible at the time was made by Childers, *War and the Arme Blanche*, 239-60.

31 Paddy Griffith, *Forward Into Battle: Fighting Tactics from Waterloo to Vietnam*, Chichester: Anthony Bird, 1981, 43-74.

32 Jean Bou, "Cavalry, Firepower, and Swords: The Australian Light Horse and the Tactical Lessons of Cavalry Operations in Palestine, 1916-1918," *Journal of Military History*, Vol. 71 No. 1 (January 2007) 99-125.

33 Martin Blumenson, *The Patton Papers Volume II 1941-1945*, New York: Houghton Mifflin, 1974, 21.

34 "The New Japanese Cavalry Regulations," *The Cavalry Journal* [UK], Vol. 3 No. 11 (1907), 218; Norman Stone, *The Eastern Front 1914-1917*, London: Hodder and Stoughton, 1975, 17.

that between them still obscure what actually happened in that war, but the most likely chief cause was poor horsecare and supply problems over such long rail communications.[35] Russian and Soviet cavalry continued to carry swords up to the end of the Second World War.

While combining firepower with speed of movement was central to cavalry reform, the debates over cavalry weapons undervalued the part played by artillery that was mobile enough to keep pace with cavalry. This was clearly demonstrated at the end of the American Civil War in the Selma campaign of March-April 1865, in which accompanying artillery made it possible for the cavalry to assault fixed defences and maintain their speed of advance independent of infantry. Combined with the ability of the Union cavalry to use mounted charges in combination with their repeating carbines, this made them a significantly new arm, different from existing heavy and light cavalry.[36] From the Civil War up to the First World War the most common artillery doctrine was to deploy at the closest range possible, to dominate enemy riflemen with direct fire. The early battles of the Franco-Prussian War were duels between French Chassepôt infantry breechloaders and Prussian breechloading steel cannon with contact-fused shells.[37] But by the end of the 19th century the dominance of direct artillery fire could no longer be taken for granted, as was shown at the Battle of Colenso in December 1899, when two British batteries that deployed within too close a range of Boer riflemen were wiped out. Instead, at the nearby Battle of Tugela Heights two months later, the British demonstrated the use of indirect overhead fire to support successful infantry battlefield attacks.[38] By the First World War, almost all the major belligerents had forward-facing shields fitted to their field and horse artillery for defence, one notable exception being the famous French 75mm field gun. There were a few cases of direct artillery fire against cavalry in 1914, but otherwise the tactic appeared to be as obsolete as the cuirassier charge.

35 Colonel [Wiliam] Balck, *Tactics Volume II: Cavalry, Field and Heavy Artillery in Field Warfare*, revised 2nd Edition, Translated by Walter Krueger, Fort Leavenworth: US Cavalry Association, [1908] 1914, 88-96. Balck's name of William came from his father being born in Britain.

36 Stephen Z. Starr, *The Union Cavalry in the Civil War Volume I*, Baton Rouge: Louisiana State University Press, 1979, 3-46.

37 Geoffrey Wawro, *The Franco-Prussian War: The German Conquest of France in 1870-1871*, Cambridge: Cambridge University Press, 2003, 52-60; Richard Holmes, *The Road to Sedan, The French Army 1866-70*, London: Royal Historical Society, 1984, 227-33.

38 Sir Frederick Maurice, *Official History of the War in South Africa, Volume II*, London: HMSO, 1906, 500-503; Jones, *From Boer War to World War*, 114-66.

In fact, a replacement for direct-fire artillery was already being planned in motorized and mechanized form, as Russia, France and Britain all introduced wheeled armoured cars with machineguns by early 1915. The next stage in this progression was the invention and deployment on the Western Front of tanks fitted with artillery pieces by the British and French in 1916-17.[39] If First World War tanks had been conceptualised from the start as direct-fire mobile artillery, their subsequent development might have been different, including changing their persistent reluctance to co-operate with other arms. But partly because of their engineering origins, they mostly regarded cavalry as a rival that should be disbanded to provide them with extra manpower, an attitude that continued after 1945. In the first large-scale British use of new artillery tactics and tanks at the Battle of Cambrai in November 1917, the failure of the tanks, which had achieved institutional recognition in 1916 as the Tank Corps, to co-operate with the cavalry may have prevented what ended as a drawn battle becoming a significant victory.[40] When the British introduced the lighter and faster Medium A "Whippet" tanks armed only with machineguns, it was the cavalry that were eager to develop co-operation with these tanks, while by the Battle of Amiens in August 1918 some cavalry brigades had effectively become cavalry-mechanized units by combining with armoured cars and motorized infantry.[41] Adding extra artillery and armoured cars or light tanks to cavalry divisions became standard for all countries either during or after the First World War, and by the start of the Second World War some countries had also equipped their cavalry with anti-tank weapons, including the Polish lancer regiment which charged German infantry in the Battle of Krojanty in September 1939 before being repulsed by fire from armoured cars, an episode twisted by German propaganda into the legend of Polish lancers charging tanks.[42]

39 J.P. Harris, *Men, Ideas and Tanks: British Military Thought and Armoured Forces, 1903-1939*, Manchester: Manchester University Press, 1995, 47-78.

40 Heinz Guderian, *Achtung- Panzer!* Translated by Christopher Duffy, London: Weidenfeld and Nicholson, [1937] 1999, 77-85; Stephen Badsey, "Cavalry and the Development of Breakthrough Doctrine,", in Paddy Griffith (ed.), *British Fighting Methods of the Great War*, London: Frank Cass, 1996, 82-5; Bryn Hammond, *Cambrai 1917: the Myth of the First Great Tank Battle*, London: Weidenfeld and Nicholson, 2008.

41 Kenyon, *Horsemen in No Man's Land*, 202-14, 243.

42 Piekalkiewicz, *The Cavalry of World War II*, 7-8.

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The firepower revolution is best understood as a subset of the wider industrial revolution, the impact of which up to the 1860s was much greater on strategy than on battlefield firepower and tactics, making the American Civil War a transitional war.[43] The exaggerated claims of the impact of firepower made senior generals in this decade reluctant to use cavalry on the battlefield, or in other than peripheral roles. One historian has suggested that an army with a better understanding of cavalry would have followed the repulse of "Picket's charge" of Confederate infantry at the Battle of Gettysburg in 1863 with a mass counter-charge of Union cuirassiers, so winning the battle.[44] Despite American cavalry favouring dismounted action, in contrast to the charging tactics of the Austro-Prussian War and Franco-Prussian War, there were similarities in all three wars as cavalry were used not to crown a victory, but mostly as a defensive arm to prevent defeat, and were often blamed for what were wider failings beyond their control.[45] With the new larger armies, scouting was a weak point for cavalry, although that poor scouting remained a problem in all armies up to the First World War suggests that this was also a wider problem in staffwork and communications technology.[46] As in all previous and subsequent wars, at the start of the Civil War good cavalry was a rapidly wasting asset that took time and training to replace, and this particularly affected the Confederate cavalry, which declined markedly from the mid-point of the war, while Union cavalry progressively improved. There was an ultimately unresolved debate among observers and commentators as to whether the initial preference for dismounted tactics represented an appropriate response to the new firepower, or a lack of training and horsemanship in improvised citizen armies.[47]

43 Stig Förster and Jörg Nagler (eds), *On the Road to Total War: The American Civil War and the German Wars of Unification 1861-1871*, Cambridge: Cambridge University Press, 1997; Earl J. Hess, *Civil War Infantry Tactics: Training, Combat, and Small-Unit Effectiveness*, Baton Rouge: Louisiana State University Press, 2015; Paddy Griffth, *Rally Once Again: Battle Tactics of the American Civil War*, Marlborough: Crowood Press, 1987.

44 Griffth, *Rally Once Again*, 67.

45 Gervase Phillips, "Scapegoat Arm: Twentieth Century Cavalry in Anglophone Historiography," *The Journal of Military History*, Vol. 71. No. 1 (January 2007) 37-74.

46 Spencer Jones, "Scouting for Soldiers: Reconnaissance and the British Cavalry 1899-1914," *War in History*, Vol. 18 No. 4 (November 2021) 495-513.

47 Michael Somerville, *Bull Run to Boer War: How the American Civil War Changed the British Army*, Warwick: Helion, 2019, 136-92; Jay Luvaas, *The Military Legacy of the Civil War: The European Inheritance* (2nd Edition), Lawrence: University Press of Kansas, 1988.

The chief change wrought by the wider industrial revolution was the impact of rail transport on the size and mobility of armies, adding an extra dimension to cavalry raids on enemy communications and supply lines. This was of particular interest to the British and the Russians, who up to the end of the 19th century gained more experience of cavalry in colonial wars than any other great powers: the British were interested because their global empire included many countries in which long rail supply lines might be a factor in a war (which became true for them in the Boer War), and the Russians because of the parallel between rail systems in the American western theatre of war and in the flat and open plains of central Europe.[48] The early link between Russian and British thinking is shown by the reception of a book advocating cavalry reform in 1877 by Lieutenant Colonel George Denison of the Canadian militia, written in response to a prize offered by the Russian government, and cited as a significant influence on Russian cavalry and on later Soviet doctrines.[49] A year earlier, the Russian Army practiced its first American-style cavalry raid on exercises: General Prince Grigory Gallitzen, military governor of the Ural region, enthused that, "The Americans transmuted into reality the cavalryman's most celestial dreams, and our cavalry is the only one in Europe that can emulate them".[50] Both Russian cavalry and their Cossack irregulars (about 35 percent of their cavalry) already had the strongest tradition in Europe of fighting dismounted, and these ideas were reflected in Russian cavalry advances and exploitation in the Russo-Turkish War, in which Russian lancers and hussars carried swords and carbines, with lances for the front rank, dragoons carried breechloading rifles and dismounted to fight, and Cossacks carried lances, swords, and rifles. Ottoman cavalry were better armed, with a combination of repeating rifles and lances, but comparatively badly mounted and trained. In 1882, all Russian cavalry adopted rifles and prioritised dismounted tactics, while still retaining the arme blanche.[51] The Cossacks used a very loose riding formation for turning reconnaissance

48 John S. Harrel, *Soviet Cavalry Operations During the Second World War and the Genesis of the Operational Manoeuvre Group*, Philadelphia: Pen and Sword, 2019, 9-24; Edward M. Spiers, *Engines for Empire: the Victorian Army and its Use of Railways*, Manchester: Manchester University Press, 2015, 45-8.

49 George T. Denison, *A History of Cavalry from the Earlies Times: With Lessons for the Future*, London: Richard Clay, 1877, with a dedication to Czar Alexander II; Christopher Bellamy, *The Evolution of Modern Land Warfare: Theory and Practice*, London: Routledge, 1990, 128.

50 Quoted in Harrel, *Soviet Cavalry Operations During the Second World War*, 26.

51 Frederick Chenevix-Trench, *Cavalry in Modern War*. London: Kegan Paul, 1884, 14; Frederick Maurice, *The Russo-Turkish War 1877: a Strategical Sketch*, London: Swann Sonnenschein, 1905, 13-19.

into opportunistic charging, known to them as the "lava" and comparable to the swarming formation used by the French Chasseurs d'Afrique.[52] After the Russo-Japanese War some effort was made to teach all Russian light cavalry the Cossack lava formation.

It is most likely that the US Army failed to capitalise on its cavalry achievements after 1865 chiefly because of its swift reversion to a much smaller force appropriate for the continuing American wars of westward expansion, and because poor horses and lack of training forced the cavalry to rely almost exclusively on dismounted fighting, which was already a strong US Army tradition.[53] In the critical period between 1871 and 1914 military thought was dominated by Germany and France, although neither gained any significant first-hand experience of cavalry operations.[54] In 1899, I.S. Bloch in his famous book *Is War Impossible?* was unable to reach any firm conclusions on cavalry's future value after reading exclusively French and German authorities, since "It must be understood that for the consideration of this question we have only the opinion of different military specialists".[55] Non-European armies had little impact on this dominance, since either they copied European practices, or were limited in their effectiveness by small numbers, poor horse stock, and obsolescent weapons, which were a feature – to cite only two examples – of the cavalry of the War of the Pacific and the Sino-Japanese War.[56] But the assumption that in colonial war western cavalry would inevitably prevail through superior firepower was not always correct, thanks to technology transfer. At the Battle of Little Big Horn in 1876, the US Cavalry were armed with obsolescent breechloading carbines, while the variety of weapons used by their Lakota Sioux and Cheyenne enemies included the latest repeating rifles.[57] In the Transvaal War of 1880-81, a rare out-

52 Balck, *Tactics Volume II*, 188-93; Harrel, *Soviet Cavalry Operations During the Second World War*, 77-82; Cecil Woodham Smith, *The Reason Why*, London: Constable, 1953, 248.

53 Bruce Vandervort, *Indian Wars of Mexico, Canada and the United States 1812-1900*, New York: Routledge, 2006, 40-9.

54 Luvaas, *The Military Legacy of the Civil War*, 119-169.

55 I.S. Bloch*, Is War Now Impossible?* London: Grant Richards, 1899, 14 (abridged translation of Bloch's original *The War of the Future*).

56 Robert L. Scheina, *Latin America's Wars: Volume I The Age of the Caudillo 1791-1899*, Washington: Brassey's, 2003, 375-7; S.C.M Paine, *The Sino-Japanese War of 1894-1895: Perceptions, Power, and Primacy*, Cambridge: Cambridge University Press, 2003, 141-6.

57 Albert Winkler, "Close-Order Combat at the Battle of the Little Big Horn: The Use of the Model 1873 Colt Revolver," Brigham Young University Faculty Publication 4481, (2020), 8-19, https://scholarsarchive.byu.edu/facpub/4481; Vandervort, *Indian Wars of Mexico, Canada and the United States*, 178-87.

right defeat for the British in colonial war, their infantry were outshot by Boer commandos mostly equipped with identical breechloaders.[58] The British faced a similar situation in the Boer War, in which many commandos carried magazine rifles comparable to their own, and also had better artillery.

The Transvaal War and Boer War both gave a major impetus to British cavalry reformers in their efforts to spread the tactics that had originated with the Union cavalry of 1865, of which the British military thinker G.F.R. Henderson wrote in 1902, "The veteran trooper, when in the last years of the war he attained the proficiency at which his great leaders had always aimed, was a good shot, a skilful skirmisher, a good horseman, and a useful swordsman".[59] In the Boer War, British cavalry also demonstrated that they could take and hold ground through fire-and-movement tactics, "galloping" an enemy position and then dismounting, described by the cavalry reformer Major Douglas Haig as "cavalry as now arrived is a new factor in tactics".[60] The Boer War confirmed the need for cavalry to fight dismounted with rifles beyond doubt for the British, and in its aftermath they attempted to establish common doctrines throughout their empire for mounted troops. One of the most important British reforms, starting in 1904, was to give all their troops (including those of their empire, at first with the exception of Canada) the same Lee Enfield magazine rifle. The United States introduced the same reform a year earlier, adopting the M1903 Springfield rifle including for its cavalry. Although German and French military thinkers have been criticised for their neglect of the American Civil War, the implications of their failure to learn from the Boer War remain comparatively unexplored. In keeping with their wider doctrines, the French in particular saw the Boer War as almost entirely a colonial war with no lessons for European armies.[61] If either French or German cavalry had adopted British fire-and-movement tactics before 1914, the Battles of the Frontiers would have been quite different; however the institutional implausibility of this suggestion also provides perspective for similar claims about French or German failures to learn from Civil War cavalry by 1870.

58 John Laband, *The Transvaal Rebellion: The First Boer War 1880-1881*, London: Pearson Longman, 2005, 61-5.

59 G.F.R. Henderson, *The Science of War*, London: Longman Green, 1905, 56.

60 Badsey, *Doctrine and Reform in the British Cavalry,* 149.

61 Adrian Wettstein, "The French Military Mind and the Wars Before the War," in Dominick Geppert, William Mulligan and Andreas Rose (eds), *The Wars Before the Great War: Conflict and International Politics before the Outbreak of the First World War*, Cambridge: Cambridge University Press, 2015, 176-89.

In the Austro-Prussian War the cavalry of both sides are considered to have performed poorly, Prussian cavalry being described by Chief of the General Staff Helmuth von Moltke (the Elder) as "a thoroughly useless drag on the army".[62] Nevertheless, Moltke's doctrinal instructions in 1869 offered no solution to increased firepower except improving the mass charge, and no mention of dismounted action, writing firmly that "*Prussian cavalry never awaits an imminent attack but on the contrary goes forward to meet it, even when outnumbered*".[63] The Franco-Prussian War was the last in western Europe to feature cavalry charges against cavalry on a large scale and often unsupported by firepower. But both sides' cavalry charges against infantry only rarely succeeded; the often-cited Prussian "Death Ride" at the Battle of Mars-la-Tour in August 1870 was clearly understood as an exceptional case involving the deliberate self-sacrifice which cavalry must be prepared to make.[64] The Prussian cavalry are usually ranked as better than the French (although part of this may be the very positive view taken of the German Army by maneuverist-minded historians), but there was almost no dismounted fighting, and scouting Prussian cavalry were often defeated by French franc-tireur guerrilla sharpshooters, needing the help of Jäger light infantry. After 1871 in Germany, although reformers stressing the importance of dismounted fire had some influence, training was restricted by the practicalities of cost and limited time for a conscript army. In 1889 all German cavalry were given lances, and the 1909 cavalry drill regulations still stipulated that "A decisive interference in the course of a battle, whether this is accomplished by warding off the hostile attack, or by supporting one's own, is only possible by launching large masses of cavalry".[65] Even the 1912 regulations affirmed that the principal mode of fighting was mounted, in conjunction with machine guns and artillery. German cavalry carbines were better than those of the French but inferior to British rifles, and the chosen solution was to attach Jäger battalions, sometimes on bicycles or motorised, to cavalry divisions permanently.[66]

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62 Quoted in Wawro, *The Franco-Prussian War*, 61; see also Geoffrey Wawro, *The Austro-Prussian War: Austria's War with Prussia and Italy in 1866*, Cambridge: Cambridge University Press, 1996, 268-273 and 290-1.

63 "Aus den Ordinungen für die höheren Truppenführer von 24. Juni 1869" translation in Daniel J. Hughes (ed.) *Moltke on the Art of War: Selected Writings*, Novato: Presidio Press, 1993, 208-10, quotation on 210, italics in the original.

64 David Stone, *First Reich: Inside the German Army during the War with France 1870-71*, London: Brassey's, 2002, 93.

65 Balck, *Tactics Volume II*, 138.

66 Max von Poseck *The German Cavalry 1914 in Belgium and France*, Translated by Alexander

In 1870 France had recent experience of three wars, the Crimean War, the Franco-Austrian War, and the Second Franco-Mexican War; the Americans in their Civil War were confronting many tactical problems to which the French had already found their own solutions.[67] But since the 1840s, French experience of cavalry and mounted combat had been largely limited to the Armée d'Afrique in North Africa.[68] French doctrines were already imbued with the beliefs about morale that by 1914 had hardened into the disastrous cult of the offensive.[69] The notes made by the influential Colonel Charles Ardant du Picque, "Cavalry always has the same doctrine – Charge!" and "rifle cannon and accurate rifles do not change cavalry tactics at all" were already doubtful when he made them in the 1860s, and when they were published ten years after his death in the Franco-Prussian War they were demonstrably wrong.[70] But in 1913, the French Army's Ecole de Guerre still taught that infantry weapons were irrelevant "if they can no longer use them and fear conquers the soul"; while in a fine display of élan and panache two French light cavalry officers dismissed dismounted action as fit only for those "too scared, tired or old to charge any more".[71] However, as with the German cavalry, lack of recent scholarly research makes any objective evaluation of the French cavalry in the First World War difficult.

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The most contentious, if ultimately the most successful, cavalry response to firepower (and also the best studied by historians) came from the British, particularly during the 1880s as they developed a global strategy for their empire. The British cavalry already had a history of tactical flexibility, and as early as the 1830s and 1840s cavalry regiments were sent to Canada and southern Africa

Strecker et al, Berlin: Mittler, 1923, especially 21-8; David Nash (ed.) *German Army Handbook April 1918*, London: Arms and Armour Press, 1977, 62-66.

67 Griffth, *Rally Once Again*, 100-1, 150-8.

68 Bruce Vandervort, *Wars of Imperial Conquest in Africa 1830-1914*, Bloomington: Indiana University Press, 1998, 62-5; V.G. Kiernan, *Colonial Empires and Armies 1815-1960*, Stroud: Sutton, 1988, 74-75.

69 Jack Snyder, *The Ideology of the Offensive: Military Decision Making and the Disasters of 1914*, Ithaca: Cornell University Press, 1984, 57-105.

70 [Charles] Ardant du Picq, *Battle Studies: Ancient and Modern Battle*, New York: MacMillan, [1880] 1921, 179, 181.

71 'Cavalry Tactics,' Ecole de Guerre Lectures 1913, Vol. 1, and British Army translation in *The Cavalry Journal* [UK], Vol. 8, No. 29 (1913) 94, both quoted in Badsey, *Doctrine and Reform in the British Cavalry,* 215.

trained to fight on foot with carbines and infantry muskets.[72] The British Army's traditions also included considerable power and influence for its individual regiments, and for senior officers.[73] The result of this was that institutional rivalries involving the cavalry occasionally become matters of politics at the highest levels, to the annoyance and bemusement of cabinet ministers. In 1904, in an argument that was ostensibly about the tactical value of lances, Lord Roberts as Commander-in-Chief of the Army threatened a minister that he would resign and publicly denounce the government if a cavalry training manual reflecting his own views was not published immediately.[74]

The highly dispersed nature of the British Army meant that under their mobilization scheme of 1886 there was only one cavalry division in Britain itself. The British had two other reliable sources of cavalry, the Egyptian Army which they trained and officered after 1882, and the Indian Army, otherwise their strategy was to augment their regular cavalry with a variety of British and colonial volunteers and irregulars as needed, and to institutionalise the creation of mounted infantry battalions by detaching soldiers from their infantry regiments. Giving horses to infantry as a means of transport was an old practice, and in the French and Russian armies dragoons still kept dismounted fighting as part of their tactics. The British mounted infantry scheme, which lasted until 1913, was one of a number at the time meant to support cavalry with additional firepower, and also to be a cheap substitute for cavalry: a British mounted infantry battalion serving in Sudan in 1885 was calculated to cost less than half as much as a cavalry regiment.[75] In addition to being a successful stop-gap in the British cavalry's response to firepower, the mounted infantry are notable for the endless arguments they generated, both at the time and among historians, as to whether the cavalry of the American Civil War were also mounted infantry and therefore their true antecedents, and whether mounted infantry rather than cavalry were in turn the true antecedents of 20th century mechanized infantry.[76] The failure of military thinkers in other countries to understand the British Army's distinctions between mounted infantry, mounted riflemen and cavalry added considerably to this confusion. In 1908 an official German study asserted confidently that

72 Badsey, *Doctrine and Reform in the British Cavalry,* 41.

73 Hew Strachan, *The Politics of the British Army*, Oxford: Oxford University Press, 1997, 44-73 and 195-262.

74 Badsey, *Doctrine and Reform in the British Cavalry,* 144-90.

75 Badsey, *Doctrine and Reform in the British Cavalry,* 62-7 and 217-18.

76 Jones, *From Boer War to World War*, 190-96; Andrew Winrow, *The British Army Regular Mounted Infantry 1880-1913*, London: Routledge, 2018.

British cavalry had been "Trained solely for the mounted charge," and that dismounted fighting "had always fallen to the lot of dismounted infantry".[77] The cost of training the regular cavalry in all its tactical manoeuvres and formations including charging also led the British from the 1880s onwards to press, often against considerable opposition, for their home-based yeomanry (volunteer militia cavalry) and their equivalents around their empire to abandon charging and the arme blanche, and become mounted riflemen.

This global British doctrine for mounted troops was severely tested in the Boer War, in which they suffered an initial series of defeats. A large part of this was due to cavalry failings: outnumbered at the start, the individual cavalry regiments varied widely in tactical doctrines and readiness for combat. For ideologically imperialist reasons the British did not consider using Indian or Egyptian troops against the Boers. Instead, they responded by improvising large numbers of mounted infantry, together with volunteers from Britain and its empire as mounted riflemen, quickly paired with horses from across the world and mostly sent to fight with minimal training.[78] This initial surge of mounted troops brought a swift victory and the capture of the capitals of the two enemy republics, but when the Boers chose to continue in a guerilla campaign the poor quality of the British mounted forces added about an extra year to the war. Horse losses from disease, starvation and overwork were massive: of over 518,000 horses used, 66 per cent died.[79] The many parallels with Civil War cavalry are among several indicators that the Boer War deserves greater consideration as one of the intervening wars that pointed towards the nature of the First World War.

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In the first two months of the First World War, on the Western Front both the French and German cavalry experienced not only massive casualties, but also

77 Balck, *Tactics Volume II*, 85.

78 Stephen M. Miller, *Volunteers on the Veld: Britain's Citizen-Soldiers and the South African War, 1899-1902*, Norman: Oklahoma University Press, 2007, 21-37 and 158-72; Craig Wilcox, *Australia's Boer War: The War in South Africa 1899-1902*, Oxford: Oxford University Press, 2002, 15-55; Carman Miller, *Painting the Map Red: Canada and the South African War 1899-1902*, Montreal: Canadian War Museum, 1903, 155-65 and 289-97.

79 Frederick Smith, *A Veterinary History of the War in South Africa*, London: H.W. Brown, 1919, 226; Graham Winton, *Horsing the British Army 1875-1925*, Solihull: Helion, 2013, 59-122; Darrell Hall, *The Hall Handbook of the Anglo-Boer War 1899-1902*, Pietermaritzburg: University of Natal Press, 1999, 236-7.

the collapse of their shared pre-war paradigm of cavalry warfare. As in previous recent wars, cavalry did better in defence than attack: the German cavalry particularly underperformed, being only occasionally able to penetrate the Belgian, French and British cavalry screens despite having considerable superiority in numbers. When in September 1914, General Erich von Falkenhayn, the German War Minister, announced that "The dismounted cavalryman should be able to fight exactly as an infantryman; cavalry charges no longer play any part in war",[80] this was an over-reaction to the trauma of defeat rather than an accurate prediction. The initial defeat of a German cavalry division in the Battle of Halen ("the battle of the silver helmets") in early August 1914 by a Belgian dismounted cavalry and cyclist brigade with machineguns was given additional notoriety in 1937 by Major General Heinz Guderian, who used it to open his book about the future of tanks *Achtung-Panzer*! in order to bolster his claim that "They will achieve nothing in future war".[81] As in previous wars, the German problems came as much from poor horsemanship, overloading, and horse exhaustion as from charging tactics in the face of firepower, and also from the unfeasibility of the Schlieffen-Moltke Plan.[82]

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The First World War marked the end of the Napoleonic paradigm for land warfare, showing the domination of firepower over movement for men and animals, the blurring of battle with siege warfare, and the creation of the empty battlefield. But if pre-war beliefs in the primacy of the charge had been disproved, so had the equivalent beliefs that increased infantry, machinegun and artillery firepower would simply wipe the cavalry out; the judgement repeated by the British Army's official history in 1947, "you can't have a cavalry charge until you have captured the last enemy machine-gun," [83] was even on the Western

80 Quoted in translation in "Editor's Notes," United Service Magazine, Vol. LI New Series (1914), 226.

81 Heinz Guderian, *Achtung-Panzer!* Translated by Christopher Duffy, London: Weidenfeld and Nicholson, [1937] 1999, 26-31, quotation on 123; Joe Robinson, Francis Hendricks and Janet Robinson*, The Last Great Cavalry Charge: the Battle of the Silver Helmets, Halen 12 August 1914*, Stroud: Fonthill Books, 2015, 78-129.

82 Poseck, *The German Cavalry 1914 in Belgium and France*, especially 21-8; David D. Orondo, *Riders of the Apocalypse: German Cavalry and Modern Warfare, 1870-1945*, Annapolis: Naval Institute Press, 2012, 39-60.

83 Attributed to an unidentified US Army officer in James E. Edmonds, *The History of the Great War based on Official Documents: Military Operations France and Belgium 1918 Volume V*,

Front simply untrue. Horsed cavalry, like horsed transport and artillery, continued to have a role especially in the geographical spaces in which industrialised war could not yet be fully conducted. Although firepower increased in absolute terms both during and after the First World War, the rate of increase was not as great as before, and many weapons introduced before 1914 remained mainstays of combat until 1945. The most important improvements after 1914 were in artillery firepower and explosives, which came to dominate industrialised warfare. Otherwise, the most significant changes came in delivery systems, through motorization and mechanization, including aircraft and the development of the fast tank in the 1920s. Like advocates of the rifled musket in the 1860s, early advocates of tanks and bomber aircraft also made exaggerated and premature claims about their effectiveness, which influenced and distorted their use in the Second World War.[84]

On the Western Front after 1914, cavalry numbers dropped to about two percent of the French and British armies, while the Germans withdrew almost all their cavalry, chiefly to the Eastern Front. The deep Cossack raids into eastern Germany that had been predicted before the war never materialised, although about 1,500 German civilians were massacred by marauding Russian invaders in August 1914.[85] Although cavalry raids as a terror weapon to intimidate civilians as well as surprise enemy troops were an ancient practice, they should also be considered in this period as part of the emerging new practices of psychological warfare and institutionalised propaganda. On the Eastern Front, the cavalry of Austria-Hungary in 1914 illustrated the range of factors that determined any one army's response to the firepower revolution. Austria-Hungary had not been involved in a major war since 1867, and although the cavalry were regarded as an intellectual body within the army they had exerted little influence on the international cavalry debate. In 1870 they were among the first cavalry in the world to be given revolvers, and in 1908 the first to be given automatic pistols together with their carbines, while also disbanding their cuirassier regiments.[86] The defeat of an Austro-Hungarian cavalry division by a Russian cavalry divi-

London: HMSO, 1947, 196.

84 J.P. Harris, *Men, Ideas and Tanks*, 159-314; Tami Davies Biddle, *Rhetoric and Reality in Air Warfare: the Evolution of British and American Ideas About Strategic Bombing, 1914-1945*, Princeton: Princeton University Press, 2002.

85 Alexander Watson, *Ring of Steel: Germany and Austria-Hungary at War 1914-1918*, London: Allen Lane, 2014, 170-81.

86 James Lucas, *Fighting Troops of the Austro-Hungarian Army 1868-1914*, New York: Hippocrene, 1987, 96-100, 195-8.

sion in Battle of Jaroslavice in the first days of the war has been romantically but inaccurately described as the last great cavalry versus cavalry battle, but the tactics of both sides had changed significantly since the 19th century, and as well as cavalry charges and direct-fire artillery the battle included infantry, machineguns, and dismounted firepower. Jaroslavice was unusually well recorded from both sides, and so forms a valuable case study of the near-impossibility of understanding exactly what happened in the cavalry charges and battles of this period.[87]

Cavalry remained an effective part of all armies on the Eastern Front throughout the First World War, as the Germans and Austro-Hungarians adjusted their tactics to match the Russians, relying almost exclusively on dismounted firepower. All three great powers also converted many of their cavalry regiments to infantry as the war progressed. While firepower was a factor in this, so was an increasing shortage of horses and horse fodder; cavalry tactics on the Eastern Front were to some extent dictated by the success of the Allied naval blockades.[88] After 1917, cavalry enjoyed another revival as both sides in the Russian Civil War created substantial mounted forces and emphasised deep advances. What may have really been the last large-scale cavalry versus cavalry battle including mounted charges came in the Russo-Polish War, in August-September 1920 at the Battle of Komarów (the "Zamość Ring"), part of the Battle of Warsaw, in which the Red Army's Konarmia (1st Cavalry Army) fought its way out of a superior Polish encirclement.[89]

On the Western Front, the Germans concluded in 1916 that mission command was not suitable for positional warfare, and developed their trench lines into defences in depth, a series of interlocking positions stretching back for several kilometres.[90] Some Allied battle plans were intended to break through these enemy positions in one attack, with cavalry held in reserve until a gap had been created, to advance and complete the breakthrough. But the dominant method of attack from 1915 to 1917 was the French grignotage ("nibbling"), which devel-

87 Alexis Wrangel, *The End of Chivalry: The Last Great Cavalry Battles 1914-1918*, New York: Hippocrene, 1982, 105-153.

88 Douglas Kennedy, "Cavalry," *1914-1918 Online International Encyclopedia of the First World War*, https://encyclopedia.1914-1918-online.net/article/cavalry.

89 Adam Zamoyski, *Warsaw 1920: Lenin's Failed Conquest of Europe*, London: William Collins, 2014, 115-123; Norman Davies, *White Eagle, Red Star: the Polish-Soviet War 1919-1920 and the "Miracle on the Vistula"*, London: Pimlico, [1976] 2003, 226-32.

90 Tony Cowan, *Holding Out: The German Army and Operational Command in 1917*. Cambridge: Cambridge University Press, 2023, 60-70.

oped as a "bite and hold" or "step-by-step" doctrine, in which cavalry and deep advances had no role.[91] Out of these processes, the new paradigm of industrialised all-arms warfare emerged by 1918, involving creating indirect-fire artillery on a previously unimagined scale, then co-ordinating infantry attacks with suppressing artillery fire, accompanied by tanks and aircraft. This remained the paradigm for industrialized land warfare for the rest of the 20th century, until it was challenged by Maneuver War in the 1980s.[92]

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While the French and Germans on the Western Front either converted their cavalry to infantry or used them as mounted infantry, in December 1915 the story took another turn for the British with the appointment of Sir Douglas Haig to command British forces. Haig was and remains an extremely controversial figure, not least because his approach was unique among national commanders-in-chief on the Western Front, in insisting on a role for the cavalry in all major battles. David Lloyd George, the British prime minister from December 1916 onwards, considered Haig's "ridiculous cavalry obsession"[93] to be evidence of his incompetence, and persistently fought with him over the cavalry, withdrawing two of Haig's five cavalry divisions from the Western Front on the eve of the German Operation Michael offensive in March 1918.[94] The absence of German cavalry is considered a factor in Operation Michael's failure, while British and Canadian cavalry played a useful defensive role mounted and dismounted.[95] Nevertheless, both during the war and for decades afterwards, Haig has been subject to the assumptions and ridicule that have marked the entire cavalry and firepower debate, including in popular culture.[96] Revisionists

91 Jonathan Krause, *Early Trench Tactics in the French Army: the Second Battle of Artois, May-June 1915*, Farnham: Ashgate, 2013, 103-126; Paul Harris and Sanders Marble, "The 'Step-by-Step' Approach: British Military Thought and Operational Method on the Western Front, 1915–1917," *War in History*, Vol.15 No. 1 (January 2008), 17-42.

92 Jonathan Bailey, "The First World War and the Birth of the Modern Style of Warfare," *The Occasional Number 22,* Camberley: Strategic and Combat Studies Institute, 1996.

93 David Lloyd George, *The War Memoirs of David Lloyd George, Volume II*, London: Oddhams, 1936, 2018.

94 David R. Woodward, *Lloyd George and the Generals*, Newark: University of Delaware Press, 1983, 90-1 and 286-94.

95 David T. Zabecki, *The German 1918 Offensives: A Case Study in the Operational Level of War*, London: Routledge, 2006, 45-6 and 314-14.

96 Gerard J. de Groot, "Educated Soldier or Cavalry Officer? Contradictions in the Pre-1914 Ca-

have challenged this negative view of Haig from both directions, by attempts to rehabilitate Haig's reputation, on which views are still very divided,[97] and by demonstrating the actual role Haig intended for cavalry on the Western Front. One obstacle to understanding is that "breakthrough" took on some of the connotations of "the charge" as meaning exclusively a mass hoard of onrushing cavalry.[98] Haig included the possibility of a complete German collapse in all his plans, but just as the close order charge had been replaced by cavalry fire-and-movement tactics, so he intended for his cavalry to be used in smaller units as part of all-arms formations to follow and augment infantry attacks, maintaining the advance possibly over several days. As German defences became deeper, so cavalry found it possible to manoeuvre and to capture ground within the depth of the enemy deployment, and this was the context for most of the successful British arme blanche charges. Haig was never able to realise his plans fully, being obstructed not only by Lloyd George but also by a majority of British generals, including several former cavalrymen, who did not agree with his doctrine or the possibility of breakthrough. The chief criticisms were not that cavalry charges were impossible because of enemy fire, but that it was not worthwhile employing the cavalry for a comparatively small advantage, and that planning for a deep advance in the traditions of cavalry spirit distorted the entire step-by-step battle plan. Sir John Monash, commanding the Australian forces under Haig, later argued against "any justification for superimposing so unwieldy a burden as a large body of cavalry – on the bare chance that it might be useful – upon already overpopulated areas, billets, watering places and roads".[99] The closest Haig came to achieving his aim of integrating cavalry into the industrialised all-arms battle came at the Battle of Amiens, in which they enjoyed a level of success that is seldom recognised. [100] Haig later summarised the direction of his thinking, "How could infantry, piled up with all their equipment, take advantage of a decisive moment created by fire from machine-guns at a range of 5,000 to

reer of Douglas Haig," *War and Society*, Vol.4 No.2 (July 1986), 51-69; Dan Todman, *The Great War: Myth and Memory*, London: Hambledon and London, 2005, 83-4 and 191-2.

97 Compare J.P. Harris, *Douglas Haig and the First World War*, Cambridge: Cambridge University Press, 2008, with Gary Sheffield, *The Chief: Douglas Haig and the British Army*, London: Aurum, 2011.

98 David T. Zabecki, *The Generals' War: Operational Level Command on the Western Front in 1918*, Bloomington: Indiana University Press, 2018, 50-67.

99 John Monash, *The Australian Victories in France in 1918*, Sydney: Angus and Robertson, 1936, 54.

100 Badsey, "Cavalry and the Development of Breakthrough Doctrine," 138-74; Kenyon, *Horsemen in No Man's Land,* 208-230.

6,000 yards? It was by utilising light mounted troops and mounted artillery that advantage could be taken of these modern weapons". [101] After 1918 the British had the potential to build on their cavalry accomplishments, including the success of the Battle of Megiddo as well as Haig's controversial ideas, to create a doctrine of all-arms deep operations of the kind that later became associated with Deep Battle and Maneuver War. They failed to do so partly for the same reasons that the US Army failed to build on its achievements in the Civil War, as the British Army rapidly shrank and reverted to its traditional role around the empire; but also because of the fixed hostility of British tank pioneers and some reformers towards the cavalry.

* * *

By the early 1920s, among all major powers any controversies over how horsed cavalry should respond to the firepower revolution had run their course. As stated by the British cavalry's training manual in 1920, most of cavalry's roles could or would shortly be carried out by "the air force, by fast moving tanks, or by infantry conveyed in motor transport". [102] Cavalry would fight chiefly with dismounted firepower, although fire-and-movement tactics and opportunistic charges made keeping the arme blanche worthwhile. The issue of cavalry being replaced by tanks was entirely one of the timescale, which in each country varied depending on wider national policy, strategy and military doctrines, much more than on any resistance from a shrinking number of genuinely incorrigible cavalry officers. This included a continuing role for cavalry in minor conflicts and colonial warfare, and anywhere that difficult terrain and immature infrastructure continued to make them viable. The argument of cost was frequently employed: the US Army in the 1930s calculated a patrol of four cavalrymen as costing a tenth as much as an armoured car, and a hundredth as much as a tank. [103]

The process of conversion from cavalry to armour in the 1930s in some cases meant cavalry and tanks cooperating together in cavalry-mechanized forma-

101 "The Cavalry Arm: Lord Haig on Value in War," *The Times*, Friday 5 June 1925 p. 8.

102 General Staff, *Cavalry Training 1920 (Provisional) Volume II: War* (London: HMSO, 1921), Chapter I, Section 1.1. paragraph 9, and quoted by Aleric Searle, '"The Great Doctrine Disaster": Reform, Reaction, and Mechanization in the British Army, 1919-1939,' *The Journal of Military History*, Vol.87, No.3, July 2023, 608.

103 Stephen Badsey, "The American Experience of Armour," in J.P. Harris and F.H. Toase (eds), *Armoured Warfare*, London: Batsford, 1990, 127.

tions of differing sizes. In 1939, the French Army's five Divisions Légère de Cavalerie or DLC typically consisted of a horsed cavalry brigade plus a brigade of motorized infantry and machinegunners, together with four independent cavalry brigades, three of them Spahi cavalry of the Armée d'Afrique. Starting in 1934, the Italians formed three Divisioni Celeri ("fast divisions") with a similar structure, and some Italian cavalry regiments also included light tank groups. The United States started planning conversion of its cavalry regiments to include tanks, armoured cars and trucks in 1931, although the US Army was so small and dispersed that before 1938 it could not have fielded a single combat-ready division of any type. [104] In contrast, the German Panzerwaffe, established in 1936 and originally also called Schnelltruppen ("fast troops") was as deeply opposed to co-operation with cavalry as the British.

Whereas the French and Americans had abolished their separate tank organizations after the First World War, the British elevated theirs to be the Royal Tank Corps in 1923. In what is itself a very complex historical debate, it is accepted that the British led the rest of the world in tank development and armoured doctrine after the First World War, but lost this lead in the 1930s. Most historians understand this as a consequence of wider defence policy and financial limitations, but some also follow the version of events promoted in the 1930s by supporters of the tank, that the British mechanization process was flawed by including the cavalry in mechanization, rather than enforcing their outright abolition. [105] In this view, the cavalry and their political influence were to blame for the delays in creating a mobile division for the new BEF, which was not ready to fight as 1st Armoured Division in May 1940 when the Germans attacked France. Some historians also argue that the accompanying failure to establish a coherent British armoured doctrine, thanks to the influence of the cavalry, was the source of their underperformance against the Germans in the Second World War. [106] This view has been effectively challenged: when another British commanding general, Sir Bernard Montgomery, attempted to impose his preferred common doctrine on British armoured forces for the 1944 North-West Europe campaign,

104 Piekalkiewicz, *The Cavalry of World War II*, 237-8 and 246-7. "Mechanized Force Becomes Cavalry," *Cavalry Journal* [US], Vol. 40 No. 3, (May-June 1931), 6.

105 Harold Winton, *To Change an Army: General Sir John Burnett-Stuart and British Armoured Doctrine 1927-1938*, London: Brassey's, 1988, 174-219; Brian Bond, *British Defence Policy between the Two World Wars*, Oxford: Clarendon Press, 1980, 312-336; J.P. Harris, *Men, Ideas and Tanks*, 237-319; Salmon, *"Everything Worked Like Clockwork…"*.

106 Searle, '"The Great Doctrine Disaster": Reform, Reaction, and Mechanization in the British Army, 1919-1939,' 599-632, especially 624-32.

the doctrine turned out to be faulty, and the armoured regiments, including the mechanized cavalry, simply ignored it. [107] All the British arguments over mechanization of the 1930s have strong parallels with those of the 1860s onward, repeating the familiar themes that most if not all cavalry officers were reactionary, and that cavalry spirit would perpetrate a fatal flaw in wider tactical doctrine.

* * *

The most systematic analysis of the future role of cavalry was undertaken by military thinkers of the Soviet Union in the 1920s, following the obvious importance of cavalry in the Russian Civil War and the Russo-Polish War. Just as British doctrines on cavalry were shaped by their wider imperial commitments and politics, so the Soviet Union sought to devise military doctrines in keeping with its own ideologies, and the expectation that its next conflict would be a mass industrialised war, a people's war, fought on its western frontiers. The development of fast tanks featured heavily in this thinking, but since the first Soviet medium tanks had not yet been built, a Red Army doctrinal analysis produced in 1929 envisaged that the proportion of cavalry in eastern European armies would be about four percent. The most important Soviet conclusion from the First World War was that modern states were too powerful to be defeated in one continuous campaign culminating in a decisive battle, which was the approach going back in German doctrine to Moltke the Elder that could still be seen in Operation Barbarossa in June-October 1941. The Soviet concept of Deep Battle was instead based on highly co-ordinated but limited offensives with shock groups breaking through the enemy front lines, releasing principally mechanized manoeuvre groups to drive into the enemy's depth, including cavalry. [108] These "cavalry-mechanized groups" were abandoned in 1939, but revived in the crisis of November 1941, because of the shortage of tanks. [109] In the course of the war, from a peak of almost 100 Soviet cavalry divisions in 1942, they were wound down or mechanized as more tanks and motorized vehicles

107 John Buckley, "Tackling the Tiger: The Development of British Armoured Doctrine for Normandy 1944," *The Journal of Military History*, Vol.74, No.4 (October 2010) 1161-1184.

108 V.K Triandafillov, *The Nature of the Operations of Modern Armies*, translated by William A. Burhans, London: Frank Cass, [1929] 1994, 20-22, 59-61 and 90-112; Harrel, *Soviet Cavalry Operations During the Second World War,* 55-61; P.H. Vigor, *Soviet Blitzkrieg Theory*, New York: St. Martin's Press, 1983, 36-47 and 102-121.

109 David M. Glantz and Jonathan House, *When Titans Clashed: How the Red Army Stopped Hitler*, Lawrence: University Press of Kansas, 1995, 86-7.

became available. The last active Soviet cavalry-mechanized group fought in the Manchurian campaign in August 1945. [110]

Despite the recent emergence of animal history as a distinct field in cultural history, the rich historical source of cavalry in the Second World War is still relatively untapped, as the rural and pastoral side of industrialised war. The British and Americans mechanized their cavalry in 1941-42, and the Anglo-American forces in the North-West Europe campaign 1944-1945 – eventually numbering seven armies including Canadians and French – were exceptional in having no horsed cavalry. In contrast, in the Soviet Army and the armies of Asia tens of thousands of cavalry continued as combat troops until the end of the war, made obsolescent by the firepower revolution but not yet obsolete. All these cavalry had essentially the same doctrines: they were mounted riflemen intended to fight dismounted but often carried swords and lances; and their principal roles were raiding, seizing ground through speed, and scouting. In 1944 Mao Zedong decreed that for the Chinese People's Liberation Army "The reconnaissance service is essentially the concern of the cavalry," adding with a touch of cavalry spirit the importance of gaining "an absolute psychological advantage" over enemy cavalry.[111] Soviet Army doctrine throughout the war continued to stress cavalry raiding as well as integrating cavalry-mechanized groups into its Deep Battle doctrines. Having become an uncontested and normal part of armies, these cavalry became invisible in a dominant narrative of a war of industrialisation and mechanization. Their neglected existence shows the limits of both technological determinism and the reach of industrialised warfare in the global Second World War.

110 David M. Glantz, *Soviet Operational and Tactical Combat in Manchuria, 1945:"August Storm"*, London: Frank Cass, 2006; 316.

111 Quoted in Piekalkiewicz, *The Cavalry of World War II*, 1979, 237.

On the following pages;

p. 359 German soldiers take aim from the backs of horses, 1935. Courtesy of Rare historical photos. https://rarehistoricalphotos.com/german-cavalry-horses-1935/

p. 360 A postcard showing Princess Viktoria Luise of Prussia in the uniform of the 2nd Life Hussars regiment. Photo by Wilhelm Niederastroth (1874-1927) taken on 10 October 1909 (Colorized by Amada44). CC SA 3.0 Unported license. Wikimedia Commons.

Reactionaries or Realists?
The British Cavalry and Mechanization in the Interwar Period

by Alaric Searle[1]

Abstract. For many decades, the interpretation of J.F.C. Fuller and B.H. Liddell Hart dominated views on the role of cavalry in reform efforts in the British Army between the World Wars. More recent historiography has argued in great measure against the idea that the cavalry retarded progress in mechanization. This article takes the opposing view, however, presenting a picture which does not show resistance to technology, but rather bitter rejection of the social consequences of the abolishing of the cavalry. The emotional attachment to the cavalry was closely connected to the love of equestrian sports in the British Officer Corps, as well as service in India. In an effort to pursue a compromise policy, the mechanization of the cavalry delayed the creation of a balanced armoured force, while it also led to a situation whereby the British Army went to war with too many poorly armoured and under-gunned light tanks.

Keywords. British cavalry, mounted infantry, arme blanche, military reform, sport and war, regimental traditions, doctrine

With both glorious successes and failures to their name, from the Charge of the Light Brigade in the Crimean War (25 October 1854) to the attack of the 21st Lancers at Omdurman (2 September 1898), British cavalry have not been without their historians.[2] More recent scholarly studies have sought to con-

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2 Philip Warner, *The British Cavalry* (London and Melbourne: J.M. Dent, 1984); Anthony Dawson, *Real War Horses: The Experiences of the British Cavalry 1814-1914* (Barnsley: Pen & Sword, 2016); and, Alan Steele, *Belgium and France 1914: British Cavalryman versus German Cavalryman* (Oxford: Osprey, 2022).

sider various aspects of the mounted arm. Gervase Phillips has argued forcefully that cavalry forces, at least before 1914, showed themselves capable of significant levels of reform and adaptation.[3] Stephen Badsey's study of British cavalry from 1880 to the end of the Great War takes an optimistic view of the value of British cavalry on the Western Front.[4] It should also be remembered that the cavalry were faced with a challenge from the mounted infantry before the First World, a subject recently examined by Andrew Winrow in his D.Phil. thesis of 2014. He takes a less charitable view of the British Army cavalry, pointing out the shallowness of their arguments against the mounted infantry force, arguing that the mounted infantry in fact proved effective in colonial wars before their abolition in 1913.[5]

A few historians have tackled the question of cavalry reform in the years leading up to the outbreak of the First World War,[6] but there is a clear and sharp divide between those who defend the measures taken to reform British cavalry and those who see the cavalry officer as a caricature of the aristocratic, technophobic and backward-looking officer, determined to defend his way of life in the face of all military logic. On this point, Badsey is correct that the clichèd image of the cavalry officer became ingrained in public thinking in Britain in the aftermath of the First World War.[7]

Nonetheless, since the publication of Edward L. Katzenbach's widely cited 1958 article in *Public Policy* on military attempts to defend the horse cavalry in the twentieth century, there has been a clear equation of British cavalry officers with reactionary attitudes to new technology. This interpretation found its way into wider analyses of armed forces' reactions to technological change, especially his broad arguments that military reform slowed down in peacetime and that the defence of the cavalry was linked to 'the emotion-packed matter of presti-

3 Gervase Phillips, 'Who Shall Say That the Days of the Cavalry Are Over? The Revival of the Mounted Arm in Europe, 1853-1914', *War in History*, 18(1) (2011), pp. 5-32.

4 Stephen Badsey, *Doctrine and Reform in the British Cavalry 1880-1918* (Aldershot: Ashgate, 2008), esp. Ch. 6 on the First World War, pp. 230-302.

5 Andrew Philip Winrow, The British Regular Mounted Infantry 1880-1913: Cavalry of Poverty or Victorian Paradigm? D.Phil. thesis, University of Buckingham, 2014, pp. 411-12.

6 W.L. Taylor, 'The Debate over Changing Cavalry Tactics and Weapons, 1900-1914', *Military Affairs*, 28(4) (1964-65), pp. 173-83; Edward M. Spiers, 'The British Cavalry 1902-1914', *Journal of the Society for Army Historical Research*, 57 (1979), pp. 71-79; Phillips, 'Revival of the Mounted Arm in Europe', passim.

7 Badsey, *British Cavalry 1880-1918*, pp. 303-7.

ge'.[8] Thus, the subject of British cavalry is, quite clearly, one which extends well beyond the confines of military historiography in the United Kingdom.

Still, despite the attention which has been devoted to British cavalry before and during the First World War, there has been less consideration given to British cavalry during the interwar period.[9] This can be explained, at least in part, by the fact that examination of the British cavalry has largely been subsumed within the research into British armoured forces between the World Wars. Robert Larson highlights some of the reactionary attitudes towards mechanization and the supposed continued need for horse cavalry, but notes at the same time that reactionary attitudes did not reflect the views of all cavalry officers. As significant was the steady decline of cavalry officers across the senior ranks of the British Army between the Wars. Furthermore, according to Larson, the significance of cavalry in military operations was gradually downgraded in the Field Service Regulations. In his account, the picture is a mixed one when it came to cavalry officers, but he does argue that it is false to claim that mechanization was hindered by the bitter opposition of traditionalists who continued to defend the horse.[10] David French takes an even more pronounced position, asserting that the retarding of the process of mechanization of the cavalry was down to 'the lack of sufficient funding'.[11]

Hence, historians of British armour have tended to reject the Fuller-Liddell Hart interpretation of mechanization in the interwar period, in other words, that the process was disrupted by the negative effects of the 'cavalry mentality'. Historians of cavalry have been even stronger in their denial of a retarding of mechanization by the 'cavalry mindset', arguing that cavalry forces remained significant not just in 1914 and 1918 on the Western Front, and in Palestine in 1917/18, but also in the Soviet-Polish War of 1919/20. Moreover, they argue that the 'continued existence of cavalry formations not just in the British but

8 The article was also reproduced in a collection of pieces by 'heavy-weights' in the field of international politics: Edward L. Katzenbach, 'The Horse Cavalry in the Twentieth Century', in Robert J. Art and Kenneth N. Waltz (eds), *The Use of Force: International Politics and Foreign Policy* (Boston: Little, Brown, 1971), pp. 277-97, quote, 292. An example of the employment of Katzenbach's arguments is Steven E. Miller, 'Technology and War', *Bulletin of the Atomic Scientists*, December 1985, pp. 46-48.

9 The exception here is David French, 'The Mechanization of the British Cavalry between the World Wars', *War in History*, 10 (July 2003), pp. 296-320.

10 Robert H. Larson, *The British Army and the Theory of Armored Warfare, 1918-1940* (London and Toronto: Associated University Presses, 1984), pp. 16-32.

11 French, 'Mechanization of the British Cavalry', p. 320.

also in the continental European armies of the interwar period does not indicate any antagonism towards technology.'[12] In other words, the historiography appears to show a general rejection of the claims of Fuller and Liddell Hart: there has been either outright denial of their version, or a playing down of the idea that the cavalry exerted a negative effect on advances in the development of mechanized and armoured forces between the World Wars.[13]

This article will seek to challenge the received wisdom, namely, that the cavalry cannot be considered to have been overwhelmingly reactionary, that they exerted little influence over the process of mechanization in the British Army, and that their role in the interwar period was, in essence, largely neutral, if not cooperative on occasions. In order to advance this critique, this article will consider the 'cavalry spirit' and its ripple effects, the significance of the Cavalry Committee in the mid-1920s, the continued obsession with the preservation of cavalry regiments and the horse in the 1930s, and the destructive role played by the mechanization of the cavalry in the second half of the 1930s.

I. The Cavalry Spirit in the Wake of the Great War

In order to understand the role of the cavalry in the interwar period, it is important first of all to grasp what can best be characterized as the 'cavalry spirit'. This is a phenomenon which cannot be so easily compared with other European armies, such as the German, where *Reitergeist* was something different.[14] Among the best sources which can assist in understanding the British cavalry spirit are the memoirs of former officers. What these make clear is the connection between the officer's daily routine, especially in the far-flung cor-

12 Gervase Phillips, 'The Obsolescence of the *Arme Blanche* and Technological Determinism in British Military History', *War in History*, 9(1) (January 2002), pp. 39-59, quote, 58-59.

13 Liddell Hart's criticism of the role of the cavalry was more implicit than explicit in his history of the Royal Tank Regiment, but is nonetheless identifiable. See B.H. Liddell Hart, *The Tanks*. *The History of the Royal Tank Regiment 1914-1945*. *Vol*. *I 1914-1939* (London: Cassell, 1959), pp. 293-94, 357-59.

14 Although there are obvious similarities between the idea of cavalry spirit and *Reitergeist*, not least of all the value of horse-racing which transported a particular spirit into the officer corps, something else was identified by one German officer. He considered that *Reitergeist* lay in galloping across the countryside. This spirit was visible when courage and happiness could be seen on the faces of those who galloped across difficult terrain. The genuine *Reitergeist* was created by the example set by the officers. Karl von Tepper-Laski, *Rennreiten: Praktische Winke für Rennreiter und Manager* (Berlin: Paul Parey, 2nd edn, 1903), Ch. III (4).

ners of the Empire, equestrian sports, the cult of the amateur rather than that of the professional, and the notion that learning to ride a horse was a prerequisite for the development of a sound officer. Sport and war were frequently connected in their minds.[15]

One of the features of officers' memoir literature is this very connection made by them between sport, often equestrian, and its value for the training of the soldier, although usually this was reserved for the officer given the class-based nature of the British Army in the first half of the twentieth century. According to one officer, writing in the mid-1930s:

> «There can be no doubt… that the sports of the field have always appealed to the British Army wherever, in Peace and War, it found itself. Furthermore, the love of the countryside, and the knowledge of the habits of its animal-dwellers which is inherent in every sportsman, cannot be anything but an asset to the fighting-man even in these decadent and mechanical days.»[16]

Other memoirs reinforce the impression of the close relationship between horsemanship, the playing of polo, and the role which service in India played in these pursuits. In reminiscences the opportunities which India offered for the sportsman were continually emphasized. According to General Sir Beauvoir de Lisle, writing in 1939: 'To any one who loves sport, India was and is a paradise.'[17] He also recalled that he naively thought when arriving at the Staff College at the turn of the century that he would be excused from attending riding school because he had gained so much experience on horseback in India, including by playing polo. But he was forced to attend riding school because it was a requirement for all infantry officers: 'The idea prevailed that no infantry officer knew how to ride, and the regulations laid down that all Staff officers must be good riders, so I had to be taught to ride.'[18]

Time and again, in various military memoirs, one finds the same tropes re-

15 For a general overview of the subject, see Frank Reichherzer, 'Militär – Sport – Krieg. Funktionalisierungen von Bewegungspraktiken in Großbritannien und dem Empire um 1900', in: Martin Elbe and Frank Reichherzer (eds), *Der Sport des Militärs: Perspektiven aus Forschung, Lehre und Praxis* (Berlin: De Gruyter/Oldenbourg, 2023), pp. 373-403.

16 Capt. Lionel Dawson, *Sport in War* (London: Collins, 1936), p. 13.

17 General Sir Beauvoir de Lisle, *Reminiscences of Sport and War* (London: Eyre and Spottiswoode, 1939), p. 45.

18 Ibid., p. 77.

peated: 'Sport and War are closely allied',[19] sport of every kind was available to those posted to India, with polo one of the most popular. It was the romanticization of service in India, which was inevitably closely connected to equestrian sports, which coloured not just cavalry officers' attitudes but other sections of the British Army as well.[20] The critical point here is that cavalry officers found it hard to shake off their emotional attachment to service in India which was personified by the horse. This led, at times, to schizophrenic attitudes towards the future of the cavalry.

In addition, another important source is the *Cavalry Journal.* Before the outbreak of the Great War in 1914, the journal brought a combination of articles on great cavalry leaders, developments in foreign cavalry forces, information on the care of horses, and the inevitable articles on polo and pig-sticking.[21] Following the appearance of the July edition in 1914, the journal ceased publication for the course of the war.[22] It was reinstituted in 1920, with Field-Marshal The Earl Haig, himself a cavalryman, writing a foreword.[23] The rationale for the re-launch of the journal was laid out by him. In addition to the need to maintain cavalry traditions, the journal would be required 'to record the cavalry history and the lessons of the war… [and] to correlate in the light of the experience of the war the policy and principles of the training of cavalry and allied arms'. He added that the duties of the cavalry had become more 'diverse and complicated' during the war.[24]

Nonetheless, if one examines the volume for 1920, there is a strong sense that cavalrymen had a feeling of foreboding about the future of their arm. On the one hand, there were the usual prewar-type articles on regimental polo, advice on

19 Ibid., p. 272.

20 Sir James Willcocks, *The Romance of Soldiering and Sport* (London: Cassell, 1925), pp. 1-20, 202-260; Lt.-Col. Alban Wilson, *Sport und Service in Assam and Elsewhere* (London: Hutchinson, 1924), pp. 17, 280; Field-Marshal Lord Birdwood, *Khaki and Gown: An Autobiography* (London and Melbourne: Ward, Lock, & Co., 1941), pp. 32-36, 90-92.

21 A perusal of the volume for 1913 of the *Cavalry Journal* gives an indication of the general prewar atmosphere in the British Cavalry.

22 Anon., 'Explanations', *Cavalry Journal*, 10 (April 1920), p. 1.

23 Field-Marshal Sir Douglas Haig, Commander-in-Chief of the British Expeditionary Force in France from late 1915 until the end of the Great War, had a very specific cavalry background. After commanding the 17th Lancers, he served as Inspector-General of Cavalry in India (1903-1906). He was also the author of an important text on cavalry. Major-General Douglas Haig, *Cavalry Studies: Strategical and Tactical* (London: Hugh Rees, 1907).

24 Field-Marshal Haig, 'Introductory Remarks', *Cavalry Journal*, 10 (1920), pp. 5-6.

how to handle horses, cavalry traditions, foreign views on cavalry and the careers of famous cavalrymen.[25] On the other, the implications of events in the Great War required some consideration, with articles appearing on the employment of cavalry on the Western Front, and in Palestine and Mesopotamia.[26] At the same time, there were articles which communicated not only the defensive attitude of the traditionalists, but which were also a response to three articles published by the most prominent postwar advocate of the tank in the army at the time, Colonel J.F.C. Fuller, dealing with cooperation between tanks and cavalry.[27]

One of the articles, authored by Major-General W.D. Bird, exuded the suspicion and contempt which many traditionalists felt towards the tank enthusiasts. For him, Fuller 'writes with the resolute assurance that can hardly fail to inspire either confidence in, or mistrust of, his opinions.' Bird naturally referenced the campaign of 1918 in Palestine as evidence of the continuing relevance of the horse in warfare. He also deployed a recurring argument of the defenders of the horse cavalry: the horse would one day become obsolete, but that day had not yet come. He reacted against Fuller's claim that the British High Command had displayed little imagination after the South African War, reflecting that while imagination 'is a priceless quality', it is 'not without its drawbacks'. According to Bird, peacetime armies lacked funding, hence experience tempers criticism, 'just as years are for many reasons usually opposed to ideas'.[28]

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25 In the *Cavalry Journal*, 10 (1920), examples are: Lt.-Gen. M.F. Rimington, 'Army Polo', pp. 437-41; Maj.-Gen. J. Vaughan, 'On Horse Management', pp. 7-14; Brevet Lt.-Col. H.S. Mosley, 'Observations on the Care and Management of Animals in a Mountain Sector', pp. 542-50; 'The French Horse Breeding and Remount Department', pp. 82-96; 'A French View of Cavalry and Armoured Cars', pp. 506-11; Maj.-Gen. Sir H.D. Fanshawe, 'Field-Marshal Sir Evelyn Wood, VC, GCB, GCMG', pp. 142-46; T. Miller Maguire, 'The Cavalry Career of Field-Marshal Viscount Allenby', pp. 379-84.

26 Examples are, *Cavalry Journal*, 10 (1920): 'The Belgian Cavalry in the Combat of Haelen, August 12th, 1914', pp. 442-45; Lt.-Gen. Sir H.D. Fanshawe, 'Cavalry in Mesopotamia in 1918', pp. 414-29; Maj. A.W.H. James, 'Co-operation Aircraft with Cavalry', pp. 481-87.

27 Col. J.F.C. Fuller, 'The Influence of Tanks on Cavalry Tactics (A Study in the Evolution of Mobility in War)', *Cavalry Journal*, 10 (1920): Part I, pp. 109-32; Part II, pp. 307-22; Part III, pp. 510-30.

28 *Cavalry Journal*, 10 (1920): Maj.-Gen. W.D. Bird, 'Years versus Ideas', pp. 331-33; Lt.-Col. R.G.H. Howard-Vyse, 'A Defence of the Arme Blanche', pp. 323-30; Brig.-Gen. G.A. Weir, 'Some Critics of Cavalry and the Palestine Campaign', pp. 531-41. In an anonymous letter to the journal, an 'Indian Cavalry Officer of the Old 5th Cavalry Division', commented that, 'Colonel Fuller's remarks are inclined to strike one as being too general, and to be based entirely on what would now appear to be abnormal conditions.'

The nervousness with which cavalrymen considered the attacks on the viability of their arm was noted at the time by other military writers. Basil Liddell Hart, writing in 1925, commented that:

> «Cavalry enthusiasts, reluctant to see their old love disappear, draw such grains of comfort as they can find from its success in the limited sphere of close reconnaissance and for movement in uncivilized lands which happen to be flat and suitable for cavalry. In their anxiety to prepare a case for the defence they perhaps overstress this limited value.»

He continued, however, that 'the modernist school', who saw the cavalry as an anachronism, were destructive in their criticism. Yet, for him, the tank assault of the future would be 'but the long-awaited re-birth of the cavalry charge'.[29] The chief advocate of the future possibilities of the tank in the British Army in the 1920s, Colonel J.F.C. Fuller also argued that the tank would become a form of reincarnation of the cavalry.[30]

What was significant in the aftermath of the Great War, was that the reductions in the size of the British Army threatened the cavalry, in particular. The commander of the 2nd Lancers at Allahabad wrote to the Deputy Chief of the General Staff in India in June 1921 about the uncertainty being caused by the lack of information regarding the size of the reductions:

> «I know this question is causing more unrest and discontent than any other in India at the present moment and we keep on sending reminders to the people at Home to get a move on and get something fixed. There will of course be a surplus of Cavalry officers when the amalgamation is complete but we hope to be able to absorb a large number in various vacancies.»[31]

The uncertainty surrounding the proposed cuts for 1922 certainly played on the minds of many. General Archibald Montgomery-Massingberd[32] wrote to a fellow officer

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See the letter published under, 'Notes. Cavalry and Tanks', pp. 557-58, quote, 557.

29 Capt. B.H. Liddell Hart, 'Mediaeval Cavalry and Modern Tanks', *The English Review*, 40 (July 1925), pp. 83-96, quotes, 93-94, 96.

30 J.F.C. Fuller, 'The Ancestors of the Tank', *Cavalry Journal*, 18 (April 1928), pp. 244-52; idem, 'The Mechanized Cavalry of the Future: How Armoured Machines are Replacing Horse Troops at the Tactical Pivot of Battle', *The Graphic*, 19 May 1928, p. 284.

31 Lt.-Col. H.C.S. Ward to Archibald Montgomery-Massingberd, 28 June 1921, 8/16, Field-Marshal Sir Archibald Montgomery-Massingberd Papers, Liddell Hart Centre for Military Archives, King's College London (hereafter, LHCMA).

32 For biographical details, J.P. Harris, 'Sir Archibald Armar Montgomery-Massingberd (1871-1947)', *Oxford Dictionary of National Biography*, 4 October 2008, DOI:10.1093/ref:odnb/35082.

that reductions would also be coming to India and that 'we have had to make big reductions in the Indian Cavalry'.[33]

Yet despite the uncertainties about the future, officers' minds were never far away from the desire for various forms of sport. One officer wrote to Montgomery-Massingberd from the Staff College in Camberley: 'This week, with Ascot on, and perfect weather, there is a general tendency to think rather of racing and cricket, etc. than the work here.' He reinforced the observation, noting: 'The Staff College is such an ideal jumping off place for every form of sport during May, June and July'.[34]

Nonetheless, despite the array of threats which British officers faced, and cavalry officers' desire to continue their sporting activities, there was an awareness that the use of tanks in India would save on both finance and men. According to Montgomery-Massingberd writing to Lieutenant-General Sir Philip Chetwode in September 1921, tanks and tracked vehicles were seen as offering excellent opportunities for greater efficiency for internal security and on the frontier. A continual worry was a war with Afghanistan which would stretch travel arrangements given the need for camels and mules, both of which were in short supply.[35] In reply, Chetwode commented that the cavalry 'must look forward or they will cease to exist.' In fact, even at this stage in the development of British armoured forces, there was a clear vision for infantry and cavalry tanks, alongside cross-country tractors which would be used for supply.[36]

Still, there appears to have been an effort to defend the cavalry behind the scenes through the device of justifying their existence via doctrine manuals. In February 1921, the General Staff published a provisional cavalry training manual. While there was an acknowledgement that 'some of the duties which in the past could be accomplished only by mounted troops may, in future, be carried out by the air force, by fast-moving tanks, or by infantry conveyed in motor transport', cavalry was still viewed as an 'indispensable part of every army which takes the field in a country suitable for mounted movement'. Indeed, there was a clear message in favour of the *arme blanche*: 'Notwithstanding

33 Montgomery-Massingberd to Col. L.W. de Sadlier-Jackson, 4 July 1921, 8/16, Montgomery- Massingberd Papers, LHCMA.

34 Maj.-Gen. W.H. Anderson to Montgomery-Massingberd, 15 June 1921, 8/16, Montgomery-Massingberd Papers, LHCMA.

35 Montgomery-Massingberd to Lt.-Gen. Sir Philip Chetwode, 27 September 1921, 8/18, Montgomery- Massingberd Papers, LHCMA.

36 Chetwode to Montgomery-Massingberd, 6 September 1921, 8/18, Montgomery-Massingberd Papers, LHCMA.

the fact that the destructive power of modern mechanical weapons tends to ever increase, the moral effect of a mounted attack with sword or lance remains as great as ever, where the enemy is not protected by physical or mechanical contrivances.'[37]

The sense of retrenchment regarding the protection of the cavalry had already been observable in the 1920 *Field Service Regulations, Vol. II. Operations* manual. In Chapter III, covering the fighting troops and their characteristics, it was noted that tanks had the task of assisting the infantry 'to achieve decisive success', which the reconnaissance role of cavalry was emphasized. Moreover, in the list of fighting troops, although infantry came first, they were followed by cavalry, mounted rifles and cyclists, with artillery and machine-guns dealt with before tanks. In the chapters on attack and defence, the role of cavalry was treated immediately after that of the infantry.[38]

Cavalry was considered at this point as an arm with the ability to cover long distances rapidly and cross uneven ground. It apparently possessed the ability to attack with the sword or lance, while it could also employ machine-guns and Hotchkiss rifles. It was asserted that it could combine fire and mounted action, and could 'exploit, either in attack or defence, the advantages inherent in its mobility'. The view of cavalry as a reconnaissance force was combined with the belief that it would work in conjunction with the Royal Air Force. At the same time, the notion of its ability to act as a traditional screening force remained very much intact. It was claimed that the cavalry could break off an action more easily than the infantry, while it was to confirm and exploit the success of offensive operations conducted by the other arms. It was also considered useful as a local reserve once the battleline had stabilized.[39] Even in the finalized version of this manual, published in 1924, cavalry were considered to be 'usefully employed in protecting the defensive position' in mobile warfare on the defensive.[40] This understanding of the functions of cavalry was, in some respects, wishful thinking, but its advocates could always point to the successful employment of cavalry in France and Belgium, 1914 and 1918, and Palestine, 1917 and 1918.

37 General Staff, War Office, *Cavalry Training. Vol. II. War. 1920 (Provisional). 1920* (London: HMSO, February 1921), Ch. I, Sect. 1.1, pp. 9-10, LH 15/8/279, Sir Basil Liddell Hart Papers, LHCMA.

38 General Staff, War, Office, *Field Service Regulations. Vol. II. Operations. 1920. Provisional* (London: HMSO, 1920), Ch. III., pp. 21-22.

39 Ibid., pp. 22-24.

40 War Office, *Field Service Regulations Volume II. Operations 1924* (London: HMSO, August 1924), p. 167.

II. The War Office Cavalry Committee of 1926

Despite the generosity towards the capabilities ascribed to the cavalry in the field service regulations, it was clear by the mid-1920s that mechanization required some difficult decisions be made in relation to cavalry units. For that reason, a War Office Cavalry Committee was formed in the summer of 1926 and tasked with giving recommendations on the organisation of the Cavalry, including to identify any regiments which could be considered to be surplus to requirements. The Chairman was Lieutenant-General Sir Archibald Montgomery-Massingberd, with five further members and a secretary. Their main aim was to 'study the possibility of reducing the peace-time expenditure on the cavalry arm'.[41] They set out to consider three questions:

(i) What strength of cavalry is required for war and, consequently, how many regiments must be maintained in peace.

(ii) What measures should be taken to improve the effectiveness of the cavalry.

(iii) Whether any saving of expenditure is possible in order to provide funds necessary for carrying out measures suggested under (ii).[42]

The approach adopted included circulating a questionnaire to selected officers, according to their expertise: the first group (A) consisted of senior cavalry officers, the second (B), senior officers of other branches of service, with the third (C) consisting of less senior cavalry officers.[43]

The thirteen officers named in the 'A list' consisted of Field-Marshal Sir W. R. Birdwood, Generals Philip Chetwode and G. de S. Barrow, followed by two lieutenant-generals, four major-generals and four colonels. In the 'B list' there were nineteen officers, including three full generals, three lieutenant-generals, six major-generals and seven colonels. This list contained some of the most prominent names in the British Army: General Sir C.H. Harington, Major-Generals Sir C.F. Romer, Sir John Burnett-Stuart, Sir Edmund Ironside and C.W. Gwynn, alongside Colonels C.P. Deedes, John Dill, and the tank officers, George M. Lindsay, J.F.C. Fuller and Sir Hugh Elles. The C List consisted of twenty cavalry officers, with six colonels and fourteen lieutenant-colonels represented.[44]

41 The War Office, SECRET. Interim Report of the Cavalry Committee. Copy No. 15, 23 November 1926, pp. 1-3, 9/5/1, Montgomery-Massingberd Papers, LHCMA.

42 Ibid., p. 3.

43 Ibid., p. 3.

44 List of officers consulted by the Cavalry Committee, n.d. [1926], 9/5/4, Montgomery-Massingberd Papers, LHCMA.

All these officers were sent a questionnaire on 10 August which was to be returned to the War Office by 15 September 1926. The covering letter noted that, 'no measure involving increased expenditure can be adopted unless an equivalent saving can be made in some other direction'. Any proposals made which would involve an increased financial outlay required, therefore, an equivalent saving elsewhere. The letter included information on the annual cost of units and establishments.[45] The questionnaire itself began with a series of assumptions, the first of which was that: 'A Continental war is of extreme improbability.' This was accompanied by the presumption that an expeditionary force would be 'organized primarily with a view to a possible war in an underdeveloped country'. Likewise of note was the statement that, 'in view of the uncertainty as to the lines on which the development of tanks will proceed, tanks will not be included as part of a Cavalry formation', although this ruling did not apply to armoured cars.[46]

It must have been clear to the Committee from the outset that this was going to be a controversial task. A fellow officer wrote to Montgomery-Massingberd in August 1926, by which time the committee work was already underway, remarking: 'I don't envy you your Cavalry Committee and as you say any innovations will draw remonstrances from the diehards'.[47] Yet, the same individual wrote a few months later that, 'I can't believe the day of the horse is over as a fighting adjunct', even if he was willing to accept that the horse could be removed from transportation work if a machine could do the job better.[48] The emotion surrounding the entire issue of the future of the cavalry may have caused the Committee not to consider in the first iteration the 'desirability of retaining both the sword and the lance in the armament of cavalry'.[49]

45 SECRET AND PERSONAL, sample covering letter, n.d. [10 August 1926], 9/5/4, Montgomery- Massingberd Papers, LHCMA. The date when the covering letter was sent appears accurate since other recipients received the same letter, dated 10 August 1926, such as SECRET AND PERSONAL. Lt.-Col. E.K. Squires (Secretary, Cavalry Committee) to Col. George M. Lindsay (War Office, London S.W.1), 10 August 1926, LH 15/12/5, Liddell Hart Papers, LHCMA.

46 SECRET AND PERSONAL. Questionnaire, n.d. [Aug. 1926], 9/5/4, Montgomery-Massingberd Papers, LHCMA.

47 Maj.-Gen. John F.S. Coleridge (Military Secretary's Branch, Army HQ, India) to Montgomery-Massingberd, 16 August 1926, 9/3/6, Montgomery-Massingberd Papers, LHCMA.

48 Coleridge to Montgomery-Massingberd, 29 November 1926, 9/3/6, Montgomery-Massingberd Papers, LHCMA.

49 War Office, Interim Report of the Cavalry Committee, p. 3, 9/5/7, Montgomery-Massin-

The questionnaire sent by the Committee consisted of three basic questions:

- First, what was considered the most suitable composition for a Cavalry formation accompanying an Expeditionary Force of five infantry divisions?
- Second, was Corps Cavalry or Divisional Cavalry, or both, required in addition to the Cavalry formation?
- Third, for the purposes of the two preceding questions, how were the cavalry and their supporting units to be organized, armed and equipped?

The answers revealed that the majority which the Committee had created for cavalry officers provided a useful block on possible reforms. For the first question, 17 respondents favoured retaining the existing strength, with six arguing in favour of replacing three regiments with armoured car or machine-gun units, and only four arguing that the Cavalry Division was unnecessary. On the second question, 14 were in favour of Corps Cavalry, six were for Divisional Cavalry, with only three of the opinion that neither Corps nor Divisional Cavalry were necessary.[50]

Whereas some officers simply submitted written statements, others were called to present evidence in person. Colonel George M. Lindsay and Colonel Sir H.J. Elles, for instance, gave evidence before the Committee on 18 and 19 October, as it was felt necessary to ask questions based on their written submissions. Lindsay argued that armoured cars were essential for the defence of communications and in suppressing anti-tank fire; he was adamant that 12 months was required to train the drivers. Much of the discussion revolved around future technical developments, with Elles of the opinion that cross-country armoured cars would replace tanks in the future. On this point he appeared to be still under the influence of his wartime experience. He did, however, argue that cavalry could not keep up with armoured cars, so should not be combined into one formation.[51] Based on this and other evidence, it becomes more understandable why the Cavalry Committee adopted some of the recommendations which in hindsight appeared to be ill-advised.

The final report, completed in early January the following year, did though take the bull by the horns and examine the thorny question of whether to retain

gberd Papers, LHCMA.

50 Cavalry Committee, Summary of replies on main points, n.d., 9/5/4, Montgomery-Massingberd Papers, LHCMA.

51 Cavalry Committee. Minutes of the 8th and 9th Meetings held at the War Office on 18th and 19th October, 1926, 9/5/4, Montgomery-Massingberd Papers, LHCMA.

the sword and the lance as cavalry weapons. The recommendation clearly aimed to take a middle ground: it was proposed that only one weapon be carried in addition to the rifle, either the sword or the lance. Nonetheless, the retention of the *arme blanche* by the cavalry was considered to be 'essential' with the justification given that experience in the late war in Palestine and Mesopotamia had demonstrated this. The one concession made to reform was that 'the present pattern of lance is unsuitable, owing to its length, weight, unhandiness and visibility', so that a more effective substitute needed to be found.[52]

It also contained, furthermore, reference to material not included in the interim report. Other subject matter covered was the composition of the Cavalry Division, measures for reducing the weight of the horse and the administration of the amalgamated cavalry regiments. The solutions to weight-reduction for horses were simple: first, some of the equipment carried by horses were to be either transferred to first-line transport, or abolished altogether; second, lighter men were to be enlisted into the cavalry. Yet, overall the tactic adopted by the committee was to accept that at some point mechanization of both the cavalry itself and its transport would have to take place, but to argue – once again – that this moment had not yet come. Thus, as a result, the Royal Horse Artillery Brigade was to be retained as a horse-drawn unit in the Cavalry Division, although a concession was made in that the brigade ammunition column be mechanized with cross-country vehicles. As a further concession, it was stated: 'If and when, however, the substitution of cavalry in cross-country armoured cars for mounted cavalry commences, the question of the replacement of horse-drawn by mechanized artillery will have to be reconsidered.'[53]

In short, while the Cavalry Committee had made an effort to consult with influential officers across the British Army, including prominent tank enthusiasts such as Major-General Sir Hugh Elles, and Colonel J.F.C. Fuller and Colonel George M. Lindsay, there is a distinct sense in the documentary record that the Chairman of the Committee, Archibald Montgomery-Massingberd, had made every effort to ensure that the cavalry was defended. That there were still very obvious reactionary views, and those determined to maintain the cavalry for emotional reasons, can be seen in some of the responses which the committee received. Colonel P.J.Y. Kelly, who belonged to the 'C List' of those consulted, wrote: 'For a nation with our vast commitments we must avoid, as much as

52 The War Office. Secret. Final Report of the Cavalry Committee. Copy No. 18, 4 January 1927, p. 10, 9/5/1, Montgomery-Massingberd Papers, LHCMA.

53 Ibid., pp. 4-9.

possible, any further reduction in our cavalry strength.' Lieutenant-General Sir D.G.M. Campbell, a member of List A, commented:

> «The question of whether Cavalry will, and can, ever be entirely replaced by any form of tank is one that the future alone can decide: but that day has not yet arrived, nor is likely to arrive for some considerable time, must be clearly apparent to anyone less bigoted than the veritable tank maniac.»

Colonel G.A. Weir, another member of 'List A' was of the opinion that the French had made a mistake in discarding the *arme blanche*; moreover, he could not 'help feeling that in retaining it we have a great advantage in the attack over cavalry which depended almost entirely on fire power for both attack and defence.'[54]

The voices which were raised in favour, in effect, of abolition of the cavalry should not be ignored, either. One such individual was the Inspector of the Royal Tank Corps, George M. Lindsay,[55] who produced a lengthy document in response to the questionnaire. He argued that the basic law of war was to achieve a balance between firepower, mobility and protection, and that where firepower was used in the nineteenth century, the *arme blanche* could achieve little against steadfast troops. According to Lindsay, the cavalry had been in decline throughout the nineteenth century, while he also challenged the view that the cavalry had done important work in 1918, pointing out the contribution of machine-gunners and armoured cars. In short, the horse was 'a very unsatisfactory vehicle for conveying our mobile firepower'. His conclusion was one which was unlikely to have gone down well with the committee: 'the cavalry division of the future should be completely mechanical, and should consist of Headquarters and four Brigades'.[56]

Likewise, not all the opinions from Lists A and C were those of die-hard defenders of the cavalry arm. It was not entirely unreasonable for senior officers, such as Field-Marshal Sir William Birdwood, to argue in the mid-1920s that a threat existed to the British Empire from Bolshevik Russia, so that Afghanistan, India and Persia might need cavalry forces to defend against some form of mi-

54 Collected responses to the questionnaire, n.d., 9/5/2, Montgomery-Massingberd Papers, LHCMA.

55 For biographical details, see J.P. Harris, 'George Mackintosh Lindsay (1880-1956)', *Oxford Dictionary of National Biography*, 23 September 2010, DOI: 10.1093/ref:odnb/34540.

56 Colonel George M. Lindsay (Inspector, Royal Tank Corps), Reply to the questionnaire on the Cavalry requirements of the Army, 25 September 1926, LH 15/12/5, Liddell Hart Papers, LHCMA.

litary aggression.[57] The key point to be made around the Cavalry Committee, nonetheless, was that its Chairman, Montgomery-Massingberd had made some effort to keep the peace within the Officer Corps over the question of the reform of the cavalry. The importance of this is that in 1933 he was to become Chief of the Imperial General Staff (CIGS) and would reach some crucial decisions when it came to the mechanization of the cavalry. For these two reasons, it seems remarkable that the two historians who have taken the question of the interwar cavalry most seriously have either ignored the Cavalry Committee completely, or have misinterpreted its historical significance.[58]

Still, despite the 'defensive work' carried out by the Cavalry Committee, there were further threats to the cavalry which emerged in the second half of the 1920s. The CIGS, George Milne, had decided by June 1926 that the previous system of allotment of places at the Staff College according to arms of service be abolished for the officers who sought to enter by way of open competition. In that year the only cavalry officer who had been able to gain entry to Camberley had made use of the quota system. The matter was referred to the Army Council for a final decision.[59] Matters had not improved for the cavalry four years later when it was noted in August 1930 that both the cavalry and infantry alone had failed to secure their full quota of competitive places for the Staff College for courses commencing in January 1932.[60]

In the wake of the work of the Cavalry Committee, political efforts the following year to reduce expenditure on the cavalry ran into heavy opposition. After several months of disagreement, the Secretary of State for War had finally sanctioned the conversion of two cavalry regiments into armoured car units in October 1927, while the Cavalry Depot had already been abolished and cavalry regiments at home had been reduced by one squadron. But this was not before

57 Ibid.

58 David French does not refer to the Cavalry Committee in his 2003 article in *War in History*. French, 'Mechanization of the British Cavalry', pp. 296-320. Larson, *Theory of Armored Warfare*, pp. 25-27, concludes that the final report 'demonstrated that the army was increasingly becoming aware of the limitations of the horse'. This statement is debatable; it conceals the fact that the cavalry lobby remained extremely powerful and that Montgomery-Massingberd did what he could to appease them.

59 Minute. 43/S.C./4028, CIGS, 17 June 1926, Extract from Military Members Meeting, 1 July 1926, [signed] Col. J.F.C. Fuller, Military Assistant to CIGS, 5 July 1926, and Minute, 26 July 1926, WO 32/3090, The National Archives of the United Kingdom, Kew (hereafter, TNA).

60 Staff College. Allotment of Vacancies By Arms, Minute No. 21, Charles Bonham-Carter, Director of Staff Duties, 4 August 1930, WO 32/3092, TNA.

the CIGS, General George Milne, had passed on several memoranda warning about the dangers of cuts to the cavalry. While the CIGS was prepared to accept that at some point 'cavalry must give way to a mechanized arm', he could not say when that day would be, thus he was convinced there was a need for cavalry. To make further changes in the cavalry he considered a serious risk to national security. A memorandum had been penned by Milne, Walter Braithwaite, W.H. Anderson and Noel Birch, which argued - not unreasonably - that savings made through cutting cavalry would be unlikely to appear because investment would be required in new armoured vehicles which were not yet available. Noteworthy in this memorandum is the denial that 'reactionary tendencies' in the army was what was behind the defence of the cavalry.[61]

While the arguments in favour of maintaining cavalry forces were generally sound on the point that the mechanization of the cavalry would take several years, and that the conflict which the army had to prepare for would be most likely outside Western Europe, the Prime Minister, Stanley Baldwin, had the suspicion that the opposition did spring from reactionary attitudes. In a letter to him in July of that year from the Secretary of State for War, Sir Laming Worthington-Evans, the latter sought to reassure him that 'far from there being any opposition in the higher ranks of the Army to mechanization and new weapons, they are one and all thinking of nothing else'.[62]

Such reassurance sounded hollow, however, not least of all if some of the pro-cavalry memoranda are considered. One written by Field-Marshal Edmund Allenby communicated the romanticism surrounding cavalry forces. According to him: 'Obstacles are more easily avoided or overcome by the suppleness of the equestrian; and the cavalier can take cover with greater facility than can the armoured car or tank.' Experience had allegedly shown 'that Cavalry, under a leader possessed of a quick brain and sound judgment, can still use the cold steel with as deadly effect as did the Paladins of old.' The horse's coat enabled it to 'defy both cold and heat'.[63]

Despite the acceptance that the days of the cavalry were numbered, the Ge-

61 Minute, Adjutant General to Secretary of State for War (via CIGS), 27 October 1920, G.F. Milne to Secretary of State for War, 3 November 1927, SECRET. Memorandum on the Reorganization of the Cavalry, 30 June 1927, WO 32/2846, TNA.

62 SECRET. Sir L. Worthington-Evans to Stanley Baldwin, 1 July 1927, responding to Baldwin to Worthington-Evans, 20 June 1920, WO 32/2846, TNA.

63 Field-Marshal [Edmund] Allenby, Cavalry's Future, 1 November 1927, and, also, Extract from private letter from Field-Marshal Sir William Robertson, 3 November 1927, WO 32/2846, TNA.

neral Staff continued to indulge the cavalry in the illusion that the day for their abolition still lay many years in the future. Between 10 and 12 April 1929, a War Office Exercise was held at Aldershot under the direction of Major-General A.E.W. Harman, Inspector of Cavalry. The widely circulated report, signed (and thereby endorsed) by the Chief of the Imperial General Staff, Field-Marshal Sir George Milne, declared that 'there is still work which can be done only by cavalry'. It was also claimed that the introduction of machine-gun carriers had 'considerably increased the power of the cavalry' because they had been freed from some of their logistic load. Scout cars were written off as possessing 'negligible' fighting power. In fact, there was a constant effort to play down the value of armoured cars, which were vulnerable if they lost their mobility, while the tendency to overworking them – 'particularly at night' – had to be avoided.[64]

Furthermore, despite the wind of change blowing in the direction of the cavalry, the new edition of the *Field Service Regulations. Vol. II. Operations*, published in 1929, appeared at first glance to continue to sit on the fence. Drawing from the 1928 manual on cavalry training, it was noted that 'the chief characteristics of cavalry are mobility, the power of dispersion and the power to deliver a mounted attack'. While the goal of cavalry remained the mounted attack, it required the support of machine-guns and artillery. While its traditional roles remained enumerated – reconnaissance, protection, pursuit, withdrawal, raids and use as a mobile reserve – on the other hand it was pointed out that as a result of the introduction of aircraft and armoured fighting vehicles, 'cavalry unaided will have little striking power, except in certain theatres where the enemy's armament and fighting value are relatively inferior'. Yet, it was asserted that with supporting arms, and the mechanization of cavalry transport, the striking power and range of cavalry formations had been 'greatly increased'.[65]

Later in the manual, the reality of the situation on the battlefield was spelt out with absolute clarity. In the section on 'Cavalry in the attack', it was laid down that commanders were required to ensure that cavalry formations were only employed on minor operations and those of an essential nature. It was noted that cavalry 'by itself can seldom hope to achieve decisive success', with the overthrow of the enemy dependent upon all arms cooperation. Surprise by large bodies of cavalry was seen as a phenomenon of the past. Nonetheless, with cooperation

64 War Office. Report on War Office Exercise No. 1 (1929). Aldershot, 10th-12th April, esp. pp. 6, 8, 15-17, WO 279/66, TNA.

65 War Office, *Field Service Regulations*. *Volume II*. *Operations*. *1929* (London: HMSO, 9 August 1929), pp. 12-14.

with air forces, and an advantageous situation on the battlefield, there remained the dream of cavalry intervening against demoralised and unprepared troops.[66] In essence, the cavalry had survived the questioning of its viability during the 1920s.

III. The Decision for Mechanization: The First Half of the 1930s

The decision to mechanize the cavalry cannot be identified as one single decision but rather a continual process running over several years. One could argue it was more of a gradual drift, caused by multiple factors. What is important is that it was heavily influenced by General Archibald Montgomery-Massingberd who took over as Chief of the Imperial General Staff from George Milne on 19 February 1933. While many of the highly damaging developments for the British Army occurred under the tenureship of the post of CIGS of his two successors, it was Montgomery-Massingberd who laid the basis for a flawed policy towards mechanization, understandable though it appears with the benefit of hindsight. His approach was coloured by three elements: first, the view that the main task of the army was imperial policing; second, his caution in matters of military reform; and, third, his stubborn defence of army traditions.[67]

It is worth noting in this context that the historian who has been most critical of the J.F.C. Fuller and Liddell Hart versions of mechanization in the interwar period, J.P. Harris, and who has been a staunch defender of Montgomery-Massingberd as CIGS, still admits that Montgomery-Massingberd was 'not an expert' on the subject of mechanized warfare. Moreover, Harris writes: 'The official suggestions put forward by the General Staff under his leadership for the composition of the Mobile Division had serious weaknesses and seem to have been unduly influenced by a desire to find congenial employment for cavalry regiments.' Thus, despite his positive assessment of 'M-M' as CIGS, Harris does concede that there were deficiencies in the approach adopted by the General Staff during the mid-1930s.[68]

Documents on army training in the first half of the decade make clear that, if the cavalry continued to be seen as a significant part of the fighting force, at the same time there were serious problems, some of which had already been iden-

66 Ibid., pp. 126-28.

67 Montgomery-Massingberd's own portrayal of his career confirms the interpretation of his commitment to tradition. See A.A. Montgomery- Massingberd, The Autobiography of a Gunner, TS, n.d., file 10/11, Montgomery- Massingberd Papers, LHCMA.

68 J.P. Harris, *Men, Ideas and Tanks: British Military Thought and Armoured Forces, 1903-1939* (Manchester: Manchester University Press, 1995), p. 264.

tified by the Cavalry Committee in 1926. In a report on training in 1934-35, it was noted that the equipment worn by the cavalry was unsuitable. It was recommended that the cavalry be issued with anti-tank guns, the Lanchester armoured car was considered inadequate, and needed to be replaced with a lighter and less conspicuous machine, while difficulties had been encountered with horse shoes slipping on tarmac roads. Above all, although light cars had been rejected in the past as reconnaissance vehicles, it was argued that the distances which often needed to be covered made the use of them essential on occasions, so that training with light cars needed to be undertaken.[69] Yet, despite the obvious problems, the CIGS, Montgomery-Massingberd, who had signed off on the report, remained wedded to the employment of cavalry forces in the future.

There were, in fact, two interrelated decisions which can be traced back to 1934 which seriously impeded the development of armoured forces in the British Army, in terms of their equipment, structure and doctrine. The first of these was the failure to follow the advice of the army's armour experts and develop a sound medium tank. In part due to lack of funding, but also due to the extensive technical challenges, and the more promising, short-term benefits offered by a light tank, not least of all a lower price-tag, the medium tank project was gradually abandoned. Moreover, when General Sir Hugh Elles was appointed to the post of Master General of the Ordnance in May 1934, he requested the development of a more heavily armoured infantry tank which would be able to resist anti-tank weapons.[70]

To the problems in tank design was added Montgomery-Massingberd's concept of a Mobile Division in which cavalry were to take their place. In October 1934, he noted in a minute that he had 'reached the provisional conclusion', rather than an independent Tank Brigade and a Cavalry Division (containing two horsed cavalry brigades), that a better solution would be a Mobile Division consisting of a Tank Brigade and a mechanized cavalry brigade, supplemented by 'an adequate proportion of reconnaissance and supporting troops'. This solution was still to leave one horsed cavalry brigade of three regiments and divisional cavalry regiments, 'for whose role mounted men are necessary'. He also thought that the horsed regiments in Egypt would be mechanized at some point.

69 War Office, *Army Training Memorandum No. 14. Collective Training Period, 1934 (Supplementary) and Individual Training Period, 1934-35* (War Office, 22 May 1935), pp. 13-14, WO 231/230, TNA.

70 Harris, *Men, Ideas and Tanks*, pp. 238-40; War Office, First Report of the Mechanization Board covering the Period 1st January 1934 to 31st December 1934, pp. 13-20, WO 33/1367, TNA.

The plan was that experiments were to be carried out in the 2nd Cavalry Brigade and the 12th Lancers. But it did not take long before the Quartermaster General raised the problem of cost, especially of the accommodation for the light tanks.[71]

Still, on 8 December 1934, the War Office forwarded a memorandum on the organization of mobile troops, noting that it was intended to commence experiments in the 2nd Cavalry Brigade with a motorized cavalry regiment; the 3rd King's Own Hussars had been selected for this purpose.[72] The final report on these mechanization experiments took until the following October to complete. The General Officer Commanding, Southern Command, John Burnett-Stuart, under whose authority the experiments had taken place, expressed disagreement on some points with the Commander of the 3rd Hussars, whom he thought had the wrong conception of the tasks which a motorized cavalry regiment should undertake. He admonished that such a unit 'can never be tactically independent', disagreeing with the 'inevitable tendency' to want heavier weapons, including mortars, to be included.[73] The length of the time it took to complete the experiments and the tendency of the senior leadership to impose their fixed opinions gave an indication of the hurdles ahead.

Crucial for an understanding of the plans to mechanize the cavalry is a memorandum completed by Montgomery-Massingberd in September 1935, entitled 'Future Organization of the British Army'. Although he acknowledged 'the gradual disappearance of the horse', he also noted that 'many urgent reforms have perforce been deferred'. He rightly understood that if war were to come in Europe, 'if our intervention is to be effective it must be prompt'. The division was to be the key element in the fighting force to be despatched to France; it was also to be anticipated that 'rapid movement of enemy troops and the presence of armoured fighting vehicles in most formations' would characterise the opening stages of the war. Still, he also considered that an unresolved question was that of 'the mobility of the divisional cavalry', which would be best resolved by the introduction of mechanized cavalry. His 'mobile division' was to include two armoured car regiments, one or two mechanized cavalry brigades, one tank brigade, two horse-artillery brigades and one horsed cavalry brigade. Were the on-

71 Minute. A.A.M.M. (CIGS) to A.G., Q.M.G., M.G.O., P.U.S., 15 October 1934, Q.M.G. to C.I.G.S., 23 November 1934, WO 32/2847, TNA.

72 War Office, 20/Cavalry/831 (S.D.2.), memorandum, 8 December 1934, WO 32/2847, TNA.

73 Report on the Mechanisation of 3rd Hussars. General Officer Commanding-in-Chief, Southern Command, to Under Secretary of State, War Office, Salisbury, 28 October 1935, WO 32/2847, TNA.

going experiments for the mechanization of cavalry to be successful, 'the conversion of cavalry regiments would not seriously affect the Cardwell System'.[74]

Although many of the broad strategic judgments made by him were sound, his determination to maintain at least some of the regimental cavalry identities obviously influenced his overall thinking. This was not entirely surprising as the cavalry continued to emphasize their distinctive traditions and, in essence, social standing. Responding to a report on the mechanization of the 3rd Hussars, the Inspector of Cavalry stated under the heading of 'Dress': 'I cannot urge too strongly that some special form of clothing is essential for personnel of mechanised cavalry. O.C. 3rd Hussars has gone into the question very thoroughly and his recommendations should be carefully considered.'[75] Here was yet another sign that the cavalry wished to maintain as far as possible its distinctive military identity.

While decision-making around tank design had started to go in the wrong direction in 1934, the doctrine-making system which had been established during the Great War remained intact. Towards the end of 1935, a new edition of the field service regulations was published which provides an interesting indication of how thinking on the cavalry had evolved. Unlike the 1929 *Field Service Regulations. Vol. II*, which had placed cavalry second in the list of fighting troops, after the infantry, and before artillery and armoured units, the 1935 manual placed armoured troops (tanks and armoured cars) before the cavalry. Although some of the old platitudes about cavalry remained, such as, the 'principal attribute of the horse-soldier is mobility', there was an attempt to downgrade its value. Cavalry was considered to be less mobile and more vulnerable than armoured forces, the concealment of large bodies of cavalry from the air presented 'serious difficulties', and it could only employ a limited proportion of its strength for dismounted action.[76]

Significant, likewise, is that in later sections of the manual on attack and defence, the word cavalry was dropped completely, with reference made in the headings merely to 'mounted troops'. Their employment in an attack was adju-

74 A. Montgomery-Massingberd, CIGS, SECRET. Future Organization of the British Army, 9 September 1935, Minute 20/General/5508, A.A.M.M. CIGS to Secretary of State, 9.9.1935, CIGS, 3.10.1935, with the instruction that the paper be passed to members of the Army Council, WO 32/4612, TNA.

75 Inspector of Cavalry to Director of Military Training, 8 November 1935, WO 32/2847, TNA.

76 War Office, *FSR II. Operations* (1929), Ch. II., pp. 10-18; War Office, *Field Service Regulations. Volume II. Operations–General. 1935* (London: HMSO, 30 November 1935), Ch. I. Fighting Troops, esp. I.3., pp. 5-6.

dged to be of value only before and after a battle, for pursuit or covering a withdrawal, while 'they should only be employed in the actual battle when it is considered that the chance of obtaining a decisive success justified their exposure to the risk of heavy casualties.' Judging the right moment when they were to be introduced was extremely difficult, since 'opportunities are fleeting and hard to perceive'. Yet, despite all the caveats, the section on mounted troops during a defensive action continued to emphasize their role in flank protection and reconnaissance.[77] Although the General Staff was clearly trying to detach the cavalry gradually from serious operational planning, it continued to try and appease the cavalry faction, so much so, that one generally very positive review of the 1935 *FSR II. Operations* manual in the leading army journal, commented that 'it is certainly not easy to understand the exaltation of the cavalry arm'.[78]

IV. Delay and Confusion: The Second Half of the 1930s

The period from 1936 to 1939, which saw the departure of Archibald Montgomery-Massingberd as CIGS in March 1936, was decisive in terms of the slow attempts to mechanize the cavalry which only served to hinder the development of British armoured forces. While it may be that the fatal decisions had already been made under 'M-M', especially in relation to the development of light and cruiser tanks, worse was to come, both in terms of the slow efforts to create mechanized forces and in doctrine. Central to both problems was the ripple effect caused by the strength of the 'cavalry lobby' inside the British Army. The complexities around the mechanization of the cavalry presented a serious problem to the British Army's armoured force.

After Montgomery-Massingberd had been replaced by Field-Marshal Cyril Deverell[79] as CIGS, the progress in the mechanization of the cavalry remained slow. In April 1936, a request was communicated to the War Office from the Commander of British Troops in Egypt as to the likely date for the conversion of the 7th Queen's Own Hussars from horsed cavalry to a light tank regiment, and from what source he would be provided with tanks. An internal War Office memorandum at the end of September 1936 noted that, following the approval

77 War Office, *FSR II. Operations-General* (1935), Ch. VI, Sect. 61, pp. 123-24, Ch. VII, Sect. 72, pp. 142-43.

78 Anon., 'Tactical Doctrine Update: Field Service Regulations, Part II, 1935', *Army Quarterly*, 32 (July 1936), pp. 262-68.

79 For further biographical details, J.P. Harris, 'Sir Cyril John Deverell (1874-1947)', *Oxford Dictionary of National Biography*, 3 January 2008, DOI: 10.1093/ref:odnb/32799.

by the Secretary of State for War of the proposals by the CIGS for the mechanization of the cavalry, it was essential that a letter should be issued to commands conveying the decision. Still, there had been no decision on the location of some of the divisional cavalry regiments, the 1st Cavalry Brigade and cavalry regiments located in India. Despite the obvious urgency, a reply was quickly sent that while 'the S. of S. has approved in principle the C.I.G.S.'s proposal for re-organization, it still remains to examine the details and if necessary to obtain extension of the financial authorities which at present regulate our powers'.[80]

Towards the end of 1936, a Sub-Committee of the Committee of Imperial Defence, met to discuss the tank situation. It was pointed out that financial stringency had hampered tank experimentation between 1927 and 1936, the Disarmament Conference had hindered the production of a suitable medium tank, while anti-war sentiment had discouraged arms companies from developing new machines. There was a new requirement for both infantry and cruiser tanks, with light tanks necessary for the four light tank cavalry regiments of the mobile division, for two light tank cavalry regiments in Egypt and possibly for four divisional cavalry regiments. At this stage, the medium tank was still an option, but there were three experimental types being developed.[81]

Despite these difficulties, late 1936 did bring one positive decision. The experimentation being undertaken by the 3rd Hussars into the possibilities of motorized cavalry had continued that summer. The two officers involved concluded that unless their troops were trained as infantry, there was little point in continuing down this route. At a meeting on 13 November in the War Office, it was thus decided that all mechanized cavalry units should be converted into light tank regiments. With this decision, the idea of motorized cavalry was finished off completely.[82]

During the course of 1937 progress continued to be slow as the penny-pinching Treasury constantly issued requests for 'further clarification'. A memorandum sent to the Director of Staff Duties in May gives some sense of the stuttering progress in terms of the procurement of tanks. As regards medium tanks, the War Office had received authority 'in principle' for 241. But the Treasury

80 SECRET. General Officer C-in-C, British Troops in Egypt, to Under-Secretary of State, War Office, 4 April 1936, E.K. Squires, Director of Staff Duties, Mechanization of Cavalry, 30 September 1936, D.F.A. to D.S.D., 1 October 1936, WO 32/2826, TNA.

81 SECRET. Committee of Imperial Defence, Sub-Committee on Defence Policy and and Requirements, The Tank Situation, War Office, 19 October 1936, WO 32/4441, TNA.

82 Larson, *Theory of Armored Warfare*, pp. 188-89.

had requested that 'we shall not order reserves till the reserve position has been further elucidated', hence they could order no more than 164 in the first batch. In the case of infantry tanks, according to the same principle, although 565 had been agreed, it was not possible for the first order to exceed 548. When it came to cruiser tanks, orders could not be placed until the new tank programme was approved. A War Office memorandum had requested 1,855 machine gun carriers, which had been approved 'in principle, subject to a hold up of orders for war wastage pending consideration of the wastage reserve requirements.'[83]

Moreover, a serious clash occurred between Cyril Deverell, the CIGS, and Leslie Hore-Belisha, the Secretary of State for War, over the former's recommendation of General Michael Blakiston-Houston as commander of the Mobile Division. Hore-Belisha thought Blakiston-Houston to be unimpressive and a typical cavalry officer. The argument rumbled on for two months; Deverell finally agreed to withdraw his proposal, but did not appoint a tank advocate. This affair demonstrated how deeply the rift between the defenders of the cavalry and their opponents, including politicians, went. It also proved to be the beginning of the end as CIGS for Deverell, who was successfully replaced on the recommendation of Hore-Belisha to the Prime Minister.[84]

Of course, it is a tricky point to argue that the decision to mechanize the cavalry caused the British Army to move away from the medium tank, since there were several factors which contributed to this decision. Nonetheless, the problems surrounding the process of mechanizing the cavalry did seem, at the very least, to cement a general trend after 1934 away from the sounder concept of a medium tank. The need to preserve the identity of the cavalry regiments distorted the underlying vision of the Mobile Division. According to one training pamphlet:

> «The Mobile Division is intended to provide the mobile component of any force that may be put into the field in the same way as the old Cavalry Division provided the mobile element of the Expeditionary Force.»

The difficulty here was that this reflected Montgomery-Massingberd's use of the opening months of the Great War as a point of reference. As a result, his idea of the purpose of the Mobile Division was, in essence, a listing of the tasks of the Cavalry Division of 1914. Moreover, the Royal Horse Artillery was advised that it would be required to maintain 'a standard of driving and vehicle maintenance

83 Register No. 57/Tanks/2180. Minute sheet No. 34. D.U.S. to D.S.D., 24 May 1937, WO 32/4441, TNA.

84 Larson, *Theory of Armored Warfare*, pp. 206-9.

as high as that of horse management'.[85] The language here reveals the determination on the part of some officers to cling to their equestrian identity.

The composition of the Mobile Division as laid down in April 1938 pointed towards the problems it faced. The Headquarters was located at Andover in the south of England, the 1st Cavalry Brigade was housed in Aldershot, the 2nd Cavalry Brigade at Tidworth in the north of England, the 1st Tank Brigade was based at Perham Down, the Armoured Car Regiment was at Tidworth, the 1st Brigade of Artillery at Aldershot, the 2nd was located in Newport, the Royal Engineers element was at Aldershot, while three squadrons of the Royal Corps of Signals were located at Aldershot, Tidworth and Perham Down.[86] This listing followed what had been described earlier in the year as 'confusion and difficulty… arising from discrepancies in the Army List as regards Units of the Mobile Division'.[87] Even if this was a minor administrative matter, it pointed to the complexities of attempting to combine different units which were dispersed across the country. The complexities of the training arrangements were made all too clear in a memorandum which outlined the arrangements for tactical and weapon, educational, physical, technical and experimental training.[88]

Moreover, the desire to maintain cavalry regimental identity continued to manifest itself in decisions surrounding the process of mechanization. At a meeting of the Co-ordinating Committee of the Army Council (C.C.A.C.) in September 1938, it was finally agreed that the site for the combined training of recruits for mechanized cavalry regiments was to be at Bovington, the old home of the Royal Tank Corps. In addition to the requirement for Treasury sanction for the conversion of the existing hutted accommodation, it was to be recommended to the Secretary of State for War that the combined corps of mechanized cavalry and the Royal Tank Corps be named Armoured Corps. It was not thought that the prefix 'Royal' would be required because the existing regiments would retain their full titles. Here was an obvious sign of the importance for senior

85 *Mobile Division. Training Pamphlet No. 3. Notes in the Tactical Employment of a Royal Horse Artillery Regiment, 1938* (War Office, 1938), pp. 1-2, available online at https://vickersmg.blog/wp-content/uploads/2018/02/v05428.pdf.

86 Headquarters, Southern Command, Salisbury, to Under Secretary of State, War Office, 4 March 1938, WO 32/2826, TNA.

87 HQ, Southern Command, Salisbury. Subject: Training and Administration - Mobile Division, To: Under Secretary of State, War Office, 2 February 1938, WO 32/2826, TNA.

88 General C-in-C, Southern Command, Subject: Training and Administration – Mobile Division, Salisbury, 11 March 1938, WO 32/2826, TNA.

officers of the maintenance of the traditions of cavalry regiments.[89]

The policy of Montgomery-Massingberd to mechanize as many cavalry units as possible, one continued by his two successors as CIGS, Sir Cyril Deverell and Lord Gort,[90] was accompanied by a shift from the established system of doctrine manuals to a new approach: the issuing of various training pamphlets. This was, in effect, a departure from the previous system of interlocking manuals in favour of training pamphlets which were not coordinated with the field service regulations.[91] One of these manuals explained in 1938 that there were two types of mechanized cavalry units – the cavalry light tank regiment and the divisional cavalry regiment: the former had the task to provide reconnaissance and protection for the mobile division through long and medium range information gathering, screening and hampering enemy reconnaissance forces; the latter was required to engage in close reconnaissance. Why separate forces were required at this stage in the mechanization process for these two tasks is a question which is difficult to answer – but it does seem as if these distinctions were simply designed to assist in the preservation of certain cavalry units.[92]

A similar pamphlet which considered the Cavalry Light Tank Regiment commented that its purpose was 'to provide a tactical doctrine which will form the basis for experiment and discussion during the 1938 training season.' It was explained that the decision to provide more or less all cavalry regiments with light tanks had been made 'to enable these regiments to carry out more efficiently the proper functions of cavalry'. This suggests that a degree of persuasion had been necessary to convince some cavalrymen that it was time to give up their horses. Beyond the repetition of the age-old tasks of the cavalry, the pamphlet did at least attempt in the conclusion to communicate some of the maxims of armoured warfare: surprise and mislead the enemy; when on the offensive, pin the enemy down before attacking him in the flank; conceal positions when on the defensive; the force must fight as a coordinated whole; mobility depends on rapidity of thought

89 C.C.A.C. 61. 8. Training of recruits of mechanized Cavalry Regiments, 9. Name of the combined corps of mechanized Cavalry and R.T.C., 22nd Meeting, 7 September 1938, WO 163/67, TNA.

90 Biographical details for Gort in Brian Bond, 'General Lord Gort', in John Keegan (ed.), *Churchill's Generals* (London: Weidenfeld and Nicolson, 1991), pp. 34-50.

91 On this ignored historical issue, Alaric Searle, '"The Great Doctrine Disaster": Reform, Reaction, and Mechanization in the British Army, 1919-1939', *Journal of Military History*, 87 (July 2023), pp. 599-632.

92 War Office, *Military Training Pamphlet No. 4. Notes on Mechanized Cavalry Units. 1938* (War Office, 1938), pp. 1-5, WO 231/133, TNA.

as much as on speed of movement; in a pursuit, push forward boldly.[93]

Up until 1939 the cavalry was able to continue to remain represented in military manuals and training documents. As late as September 1939, the first pamphlet in a series of documents designed to update the *Field Service Regulations. Vol. II. Operations* of 1935 included a section on 'Cavalry, Yeomanry and Scouts'. Although it was conceded that 'in a country with good roads, horsed cavalry is now inferior in speed to armoured forces and infantry in lorries and buses', it was claimed that it remained the most mobile arm in thickly wooded or hilly country and, in countries with good roads, for the close reconnaissance of woods and buildings. It was stated that it possessed a greater power of dispersion than armoured troops while, remarkably, the individual horsed soldier was armed with a rifle for use when dismounted and a sword for mounted attack. To support its action, cavalry units were equipped with light machine-guns and a proportion of light cars and motorcycles.[94]

Another pamphlet, issued by the War Office in January 1939, reveals the stagnation in doctrine which was, at least in part, caused by the desperate efforts to maintain some form of cavalry identity in the army. Written to explain the organization of a mechanized divisional cavalry regiment, the pamphlet began by referring the reader to the manuals *Cavalry Training (Horsed)* of 1937, *Cavalry Section Leading* (1934), *Military Training Pamphlet No. 4* (1938) and *Tank and Armoured Car Training* (1927). The regiment contained a total of 28 tanks, 44 scout carriers, 37 trucks and 41 motorcycles. The tasks remained those of traditional cavalry – reconnaissance, protection, guarding flanks, covering, conducting a pursuit and forming a mobile reserve. Almost inevitably, there was a desperate attempt to preserve the 'cavalry spirit': '*Like horsed cavalry*, mechanized cavalry will move by bounds from one tactical feature to another.' (My italics, AS.) The obvious weakness of this regiment was that its tanks were only armed with machine-guns. Hence, should enemy heavy tanks be encountered, 'the only possible action is to try to entice them to a flank, or to where it is known adequate anti-tank defence is placed.'[95]

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93 *Mobile Division Training Pamphlet No. 1. Notes on the Tactical Employment of a Cavalry Light Tank Regiment. 1938* (War Office, 1938), pp. i, 1, 52, available online at https://vickersmg.blog/wp-contents/uploads/2018/01/1938-uk-mobiledivisiontraining-pamphletno1v05426.pdf.

94 War Office, Military Training Pamphlet No. 23. Part I.-- General Principles, Fighting Troops and their Characteristics. 1939 (War Office: William Clowes for HMSO, September 1939), pp. 23-24, WO 231/161, TNA.

95 War Office, *Military Training Pamphlet No. 12. Notes on Organization, Training and*

To sum up, the second half of the 1930s saw a slow and painful attempt at a transition from horsed cavalry to the mechanization of cavalry units. While the cavalry could not be held responsible for the financial problems in the first half of the decade which hindered the development of new tanks, its flawed concept of mechanized units hindered severely the creation of a properly balanced armoured division. As a result the British Army went to war in 1939/40 with too many poorly armoured and under-gunned light tanks which were unsuited to the modern battlefield.

Conclusion

In seeking to reach a conclusion as to the hitherto unresolved issue of whether the cavalry hindered reform in the British Army, or whether they promoted realistic, gradualist policies, it is important to grasp that the impact of the cavalry was not entirely direct. It could be described as a form of 'ripple effect'. At one level, the social structure of the British Army in the interwar period was such that old regimental loyalties continued under the surface.[96] Sentimentality played a significant role as well since many officers looked back with nostalgia to their early service years in India, in particular remembering their days playing polo and hunting. The emotions created, which were imbued with a class-based distaste for things mechanical, meant that those considering reform had to move extremely carefully. This explains the defensive positions adopted by Archibald Montgomery-Massingberd when chairing the Cavalry Committee, not to mention his approach to mechanization while serving as CIGS.

It was the emotional impact of the determination to cling to the horse which distorted mechanization in the British Army, including doctrinal developments. Symbolic of the hold of the 'cavalry spirit' on the army was a memorandum, which was considered by the Co-ordinating Committee of the Army Council in May 1939. Enquiries had been received from Mobile Divisions and Cavalry Brigades at home and in Egypt, likewise from the Royal Armoured Corps and Anti-Tank Regiments of the Royal Artillery, as to whether chargers could be provided for officers. The Director of Military Training considered the horse essential for military training in relation to tactical training, supervision of tactical

Employment of a Mechanized Divisional Cavalry Regiment. 1939 (War Office: January 1939), pp. 3-6, 14, WO 231/142, TNA.

96 On the British regimental system, see David French, *Military Identities: The Regimental System, the British Army, and the British People, c. 1870-2000* (Oxford: Oxford University Press, 2005), esp. Ch. 4. 'The Construction of the Idea of "the Regiment"', pp. 76-98.

training and umpiring. Although by this point it had been ruled out for active operations, it remained a significant adjunct to training in peace. He thus wished that all Royal Tank Regiment and Mechanized Cavalry Regiment officers, and all staff officers of mobile formations, receive a horse. He provided two further arguments for the retention of chargers for cavalry officers: their historic association with the cavalry; and it would be difficult to recruit officers for the cavalry if horses were withdrawn.[97]

The proposal for an increase in the number of chargers was followed up two months later in another memorandum which pointed out that the issue was one of equity due to the creation of the Royal Armoured Corps: this had led to a situation which had seen officers of mechanized cavalry units, who had a provision for horses, serving alongside officers of the Royal Tank Regiment who had had no provision for horses since 1928. It was finally agreed that the Treasury would most likely not allow a reintroduction of chargers into the Royal Tank Regiment. The Adjutant General then called into question most of the arguments made for the retention of horses, doubting whether a commander of an armoured unit would ever command from a horse and likewise calling into question, at least indirectly, the claim that lack of horses was affecting the recruitment of cavalry officers.[98] While the proposal to increase horses went nowhere,[99] the fact that it was being discussed at all on the eve of war does provide an obvious indication of the lingering influence of the 'cavalry spirit'.

All in all, this final moment of resistance of the social conservatives in the British Army points towards the largely destructive role which the cavalry played throughout the interwar period. While senior officers were always prepared to concede that the cavalry would need to mechanize, and that armoured vehicles would soon dominate the battlefield, they were able to employ the argument, at least in the 1920s, that this day had not yet come, so horsed cavalry would need to remain because conflict might break out at any moment in under-developed countries. The argument was made repeatedly in internal memoranda, as well as in journal articles.

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97 C.C.A.C. 235. Provision of Chargers for Officers of Mobile Formations and Units. Memorandum by D.M.T., 12 May 1939, WO 163/69, TNA.

98 C.C.A.C. 287. Provision of Chargers for Officers of Mobile Formations and Units, H.J. Creedy, 31 July 1939, WO 163/69, TNA.

99 It was finally agreed that 'the present scale of horses with cavalry and ex-cavalry (now armoured corps) regiments' would be guaranteed for three years; the Treasury was to be informed. C.C.A.C. 287. 68th Meeting, 9 August 1939, WO 163/69, TNA.

In an article in the *Cavalry Journal* in 1929, for instance, one general argued that although the future of cavalry was being called into question as never before, this was not the first time 'that the justification for its existence as one of the principal arms of warfare has been called into question'. He also claimed that the cavalry had never been of use in siege warfare, yet the public had forgotten the many examples where cavalry had been used successfully. He concluded that 'the value of cavalry… has remained undiminished in spite of the advances of science', and further that it was 'unscientific to make deductions from speculative imaginations instead of from observed facts and experiences'. It was possible that the mechanized arm would 'some day' perform all the duties of cavalry, but he called into question whether 'the mechanized arm can do this much to-day or in the immediate future'. He even argued that if more mobile operations took place with mechanical vehicles in the next war, the influence of the mounted arm would be enhanced. And, the reader was warned not to be led astray by 'verbose prophecies'.[100]

It is, therefore, all things considered, very difficult to agree with the claim of some historians that the British Cavalry did not seriously hinder the progress of mechanization in the army.[101] While not all cavalry officers were reactionaries, there were no real reformers among them. In essence, the British Cavalry conducted throughout the interwar period, in keeping with one of its main tactical functions, a fighting withdrawal in the face of improved air and ground forces in European armies – and the arguments of their opponents inside the British Army. The loser in this battle was, in the first instance, Britain's armoured force but, secondly, the British Army itself.

100 General Sir George Barrow, 'The Future of Cavalry', *Cavalry Journal*, 19 (1929), pp. 176-84, quotes, 178.

101 In the view of this writer, the most balanced assessment of interwar mechanization in the British Army, including references to the cavalry and military conservatism in general, is to be found in Harold R. Winton, *To Change an Army: General Sir John Burnett-Stuart and British Armored Doctrine, 1927-1938* (Lawrence, KS: University Press of Kansas, 1988), pp. 223-32. However, while Winton is correct to seek explanations in multiple factors, he does not really acknowledge the full scale and impact of the 'cavalry spirit' and its largely insidious influence.

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What is Cavalry?: Mechanization in the Interwar U.S. Cavalry, 1919-1941

Alexander M. Bielakowski, Ph.D.[1]

During the Interwar Period, the U.S. Cavalry began to mechanize and transition from horses to tanks. However, mechanization was as much an intellectual as a physical transformation. Officers held different views regarding the ideal composition, organization, and even the culture of future cavalry forces. The discussion of these issues took place in officers' clubs, classrooms at the Command and General Staff School and the Army War College, in personal correspondence, and in the pages of the cavalry branch's professional publication – the *Cavalry Journal*. The fundamental question was "What is cavalry?". Did cavalry have to involve horses? Or did cavalry refer any mounted soldiers regardless of what they were mounted on?

On 2 June 1920, less than two years after the end of World War I, the U.S. Congress passed the National Defense Act, which defined the organization of the U.S. Army during the Interwar Period. The Act had a major effect on interwar tank development and cavalry modernization as it abolished the wartime Tank Corps. All the Army's tanks were assigned to the infantry, while the cavalry was prohibited from using tanks.[2] Also, the cavalry was reorganized into 17 Regular Army cavalry regiments (1st – 17th Cavalry Regiments), 21 National Guard cavalry regiments (101st – 117th and 121st – 124th Cavalry Regiments), and 24 Organized Reserve cavalry regiments (301st – 324th Cavalry Regiments). These regiments were further organized as two Regular Army divisions (1st and

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2 *National Defense Act, Approved June 3, 1913, As Amended by Act Approved June 4, 1920* (Washington DC: Government Printing Office, 1920).

2nd Cavalry Divisions), with the later addition of another Regular Army division and a separate brigade (3rd Cavalry Division and 7th Cavalry Brigade), four National Guard divisions and a separate brigade (21st – 24th Cavalry Divisions and 56th Cavalry Brigade), and six Organized Reserve divisions (61st – 66th Cavalry Divisions). However, almost all of these units above the regimental level in the Regular Army and National Guard units, as well as the Organized Reserve cavalry regiments, brigades, and divisions, existed almost exclusively on paper.[3]

As the 1920s wore on, War Department budgetary reductions in the cavalry included: a decrease in the strength of cavalry regiments from 12 to only six lettered troops organized into two rather than the customary three squadrons; the inactivation of the 15th, 16th, and 17th Cavalry Regiments; the 117th Cavalry Regiment redesignated as the 117th Cavalry Squadron and then again as the 2nd Battalion, 168th Field Artillery Regiment; the re-designation of the 2nd Squadron, 122nd Cavalry Regiment, as the 2nd Battalion, 103rd Field Artillery Regiment; and the consolidation of the remainder of the 122nd Cavalry into the 110th Cavalry Regiment.[4] The only additions and improvements in the cavalry during that time, other than the "paper" brigades and divisions, were the creation of the Office of the Chief of Cavalry (organized at the same time as the branch chiefs of each of the other combat arms) and the formation of the 26th Cavalry Regiment (Philippine Scouts). The 26th Cavalry, organized in 1922 from personnel of the 25th Field Artillery Regiment (Philippine Scouts) and stationed at Camp Stotsenburg, Philippine Islands, included American officers and Filipino enlisted men.[5]

Since money for research and development was almost non-existent and the most sophisticated tanks were gas-guzzling, slow-moving, and subject to frequent breakdowns, the senior leadership in the War Department believed that tanks were nothing more than mobile machine-gun emplacements and, by those standards, tanks had no real place in the cavalry. As a result, mechanization languished during the 1920s until Secretary of War Dwight F. Davis intervened. While on a tour of the United Kingdom in 1927, Davis was fascinated by the British Army's Experimental Mechanized Force, which he observed on maneu-

3 Mary L. Stubbs and Stanley R. Connor, *Armor-Cavalry*, Part I: *Regular Army and Army Reserve* (Washington, DC: Government Printing Office, 1969), 52-57; James A. Sawicki, *Cavalry Regiments of the U.S. Army* (Dumfries VA: Wyvern Publications, 1985), 104-116; and Steven E. Clay, *U.S. Army Order of Battle, 1919-1941*, Volume 2 The Arms: Cavalry, Field Artillery, and Coast Artillery, 1919-41 (Fort Leavenworth, KS: Combat Studies Institute Press, 2010), 559-695.

4 Stubbs and Connor; Sawicki; and Clay.

5 Stubbs and Connor; Sawicki; and Clay.

vers at Aldershot.[6] Upon his return to America, Davis ordered the formation of the U.S. Army's Experimental Mechanized Force at Camp Meade, Maryland, to explore the possibilities of mechanization.

The War Department laid out the basic principles to be followed during the maneuvers of the Experimental Mechanized Force. The Force was a completely self-contained unit, which combined mobility and striking power in a form unmatched by the existing arms. The Force was not a traditional division-sized combat element but rather an exclusively offensive special missions unit. During the Force's intended one-year lifespan, it was supposed to be a tactical and technical laboratory to experiment with mechanization.[7] Davis, therefore, gave the Force a free hand to experiment with any ideas related to mechanization.

Between July and September of 1928, the Experimental Mechanized Force participated in maneuvers at Camp Meade.[8] As time wore on, however, the old equipment broke down, until near the end of September, with no money available to procure new equipment, the War Department discontinued the mechanized "experiment". The reason for the decision was that "... little could be done tactically until [the Army] had more modern equipment."[9] Many in the

6 The force consisted of an armored car battalion, a tank battalion, a motorized machine-gun battalion, artillery (both truck-towed and self-propelled), motorized engineers, and limited support from the Royal Air Force. Basil H. Liddell Hart, *Tanks: The History of the Royal Tank Regiment and Its Predecessors – Heavy Machine-Gun Corps, Tank Corps, and Royal Tank Corps, 1914-1945*, Volume I (New York: Frederick A. Praeger Publishers, 1959), 255-63.

7 "Basic Principles of Experimental Mechanized Force," *Cavalry Journal* 37 (July 1928), 440-441.

8 Almost all branches of the Army sent units or representatives to Camp Meade to participate in the mechanized experiment. The Experimental Mechanized Force consisted of: 1st Battalion, 34th Infantry Regiment, which was mounted on trucks produced during World War I; 2nd Battalion, 6th Field Artillery Regiment (less one battery), which was equipped with 75mm howitzers and also mounted on World War I-vintage trucks; an engineer company; a signals company; an anti-aircraft battery; a chemical warfare company; an ammunition train; an Air Corps observation squadron; a medical detachment; and the mechanized backbone of the Force – 16th Tank Battalion (Light), equipped with World War I French-designed Renault tanks, 17th Tank Battalion (Heavy), equipped with World War I British-designed Mark VIII tanks, and the cavalry contribution, the only armored car troop in the entire country. Adna R. Chaffee, Jr., "Status of the Mechanized Combat Organization and the Desired Trend in the Future"; Lecture Delivered to the Army War College, Washington, DC, 19 September 1929; Willis D. Crittenberger Papers, U.S. Army Military History Institute, Carlisle Barracks, Pennsylvania; and Mildred H. Gillie, *Forging the Thunderbolt: A History of the Development of the Armored Force* (Harrisburg PA: Military Service Publishing Company, 1947), 21-22.

9 Chaffee, "Status of the Mechanized Combat Organization and the Desired Trend in the Future"; and Gillie, 21-22.

popular media, which heavily covered the Force, and in the Army considered the "experiment" a complete failure. Others, however, believed that the Force operated under severe limitations and wanted the "experiment" to be given another chance under better circumstances. The *Washington Post* editorialized on just that point in 1928: "It has been proved that a motorized force is superior to one that is not. But a force mounted on broken-down equipment cannot prevail against an army mounted in modern, up-to-the-minute machines. It has been demonstrated that the need is imperative for increased appropriations for mechanization. Congress should not refuse any request for such funds."[10]

In 1930, the War Department Mechanized Development Board, after spending over a year studying the data accumulated during the maneuvers of the Experimental Mechanized Force in 1928, recommended that the Mechanized Force be reestablished and made a permanent part of the U.S. Army.

> In the commercial world the machine has largely replaced man-power; so, in the Army must we, to the fullest practical degree, use machines in place of man-power in order that our man-power can occupy and "hold" without terrific losses incident to modern fire-power.[11]

The Board's recommendations[12], however, were just that – recommendations – not binding upon the U.S. Army.

In October 1930, a month before his retirement, U.S. Army Chief of Staff General Charles P. Summerall, acting on the War Department Mechanized Development Board's recommendations, ordered the establishment of a permanent Mechanized Force at Fort Eustis, Virginia. A cavalry officer, Colonel Daniel Van Voorhis[13], commanded the "permanent" Force, with the result that while the Force was technically independent, most cavalry officers now believed that they "controlled" the Force's development. After all, the cavalry was well-armed and highly mobile, just like the Mechanized Force.

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10 Gillie, 23.

11 "Mechanized Force Recommended," *Cavalry Journal* 39 (January 1930), 112.

12 The Board recommended that the new Force include: two battalions of motorized infantry, one battalion of motorized field artillery, one light tank battalion, one armored car cavalry troop, one motorized chemical corps company, one motorized engineer company, and one motorized anti-aircraft detachment. "Mechanized Force Recommended."

13 Van Voorhis began his military career as a corporal in the 10th Pennsylvania Volunteer Infantry Regiment during the Spanish-American War. During World War I, Van Voorhis served as a staff officer in France. Immediately before receiving command of the Mechanized Force, he commanded the 12th Cavalry Regiment.

After the decision to "recreate" the Mechanized Force in 1930, Brigadier General Hamilton S. Hawkins[14] began a crusade in support of the horse, primarily in the pages of the *Cavalry Journal*, that lasted until the end of World War II. He represented the most diehard pro-horse elements in the cavalry, who refused to see it as anything other than men on horseback. In 1931, Hawkins wrote an article to denounce what he saw as rumormongering in the popular press regarding mechanization in the cavalry. His chief objection was that the organization of the "permanent" and independent Mechanized Force caused many Americans to think that the horse was doomed to be replaced by the machine. Hawkins argued that mechanized vehicles could not operate in every kind of terrain and he thought that mechanized vehicles were useful only for "... smaller and less important missions."[15]

Hawkins' other comments further revealed contradictory arguments and a lack of understanding regarding mechanized technology. Hawkins admitted that he had seen demonstrations of tanks knocking down trees and stone walls, but he thought it was "... absurd to think of tanks and passenger trucks, carrying machine gunners, romping through the woods and swamps, creeks and villages at the speed that Cavalry can attain."[16] Despite this assertion, in the very next paragraph of the article, Hawkins criticized mechanized forces for moving too fast on the battlefield. He stated that it was the job of cavalry to fight in conjunction with and support of infantry, "Not to precede the Infantry by a hundred miles."[17] In addition, he believed that mechanized forces only advanced rapidly over roads and that they were no faster than foot infantry over unpaved surfaces.[18] Hawkins' opinion of mechanized vehicles was undoubtedly the result of his service during World War I, a conclusion supported by his comments later on in the article.

Hawkins stated that horse cavalry continued to perform mounted reconnaissance against enemy flanks and he acknowledged that mechanized vehicles might help to prevent this reconnaissance by enemy horse cavalry. Nevertheless, he also asserted that mechanized vehicles were incapable of performing

14 A U.S. Military Academy graduate (Class of 1894), he served as a division chief of staff in World War I and emerged from the war as a Regular Army full colonel.

15 Hamilton S. Hawkins, "Cavalry and Mechanized Force," *Cavalry Journal* 40 (September/October 1931), 19.

16 Hawkins, "Cavalry and Mechanized Force".

17 Hawkins, "Cavalry and Mechanized Force".

18 Hawkins, "Cavalry and Mechanized Force," 20.

reconnaissance. Somehow mechanized forces were capable of counter-reconnaissance, but not of reconnaissance itself. The vulnerability of tanks to artillery was yet another of Hawkins' complaints about mechanized vehicles.[19] Yet, horses and men were even more vulnerable to small arms and artillery.

In May 1931, just a matter of months after the decision to reestablish the Mechanized Force, the new Chief of Staff, General Douglas MacArthur, decided that the Army lacked the funds necessary to develop an independent mechanized arm and disbanded the Mechanized Force, transferring much of its assets to the cavalry. MacArthur realized that the cavalry was the traditional arm of mobility and maneuver and that made it the natural place for mechanized forces. He thought that it was a misconception to believe that the cavalry needed to include horses.

> Modern firearms have eliminated the horse as a weapon, and as a means of transportation he has generally become, next to the dismounted man, the slowest means of transportation. In some special cases of difficult terrain, the horse, properly supplemented by motor transportation, may still furnish the best mobility, and this situation is properly borne in mind in all our plans.[20]

MacArthur foresaw the complete reorganization and re-equipping of the cavalry into two types of regiments. Traditional cavalry regiments, relying on horses and mules, would exist only in those cases in which the horse and mule could not be replaced due to anticipated operations in difficult terrain or on unique tactical missions. The second type of cavalry regiment formed with tanks, armored cars, and trucks would represent the majority of cavalry regiments.[21]

MacArthur's decision to use many of the assets Mechanized Force to convert a horse cavalry regiment met with hostility from some cavalry officers. Van Voorhis protested that the decision doomed mechanization to become a mere curiosity within the cavalry. On the other hand, newspaper headlines and editorials predicted the complete mechanization of the cavalry and the extinction of the horse as a weapon in modern warfare, which outraged other cavalrymen.[22]

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19 Hawkins, "Cavalry and Mechanized Force," 21-22.

20 "Mechanized Force Becomes Cavalry," *Cavalry Journal* 40 (May/June 1931), 5.

21 Douglas MacArthur, Chief of Staff; "General Principles to Govern In Extending Mechanization and Motorization Throughout the Army", 1 May 1931; Cavalry Board; Office of the Chief of Cavalry, Record Group 177; National Archives and Records Administration, College Park, Maryland.

22 Gillie, 48-50.

However, since the National Defense Act of 1920 meant that tanks remained the express responsibility of the infantry, the cavalry had to become creative in its nomenclature. The cavalry now purchased "combat cars", which were usually identical to tanks. Indeed, during the 1930s, the cavalry and infantry often used identical vehicles, which were merely given different official designations. While the U.S. Army lagged behind Europeans in many technological and organizational developments, MacArthur was nonetheless one of the most forward-looking senior officers in the U.S. Army during the Interwar Period. He realized that, although the money was then unavailable for full modernization, every effort was needed to make improvements where possible.[23]

In November 1931, the cavalry officers and enlisted men of the Mechanized Force transferred to Fort Knox, Kentucky, where they eventually formed a mechanized cavalry regiment. The remainder of the Mechanized Force personnel, however, transferred back to their original branches. The War Department designated Van Voorhis and Lieutenant Colonel Adna R. Chaffee, Jr.[24], as the mechanized cavalry regiment's commander and executive officer, respectively. Chaffee, described as both one of the best horsemen and one of the "best brains" in the Army, was profoundly influenced by his experiences in World War I and abandoned horse cavalry, both literally and conceptually, soon thereafter. Several months after arriving at Fort Knox, the personnel needed to complete the formation of the mechanized cavalry regiment had not arrived and it seemed doubtful that they ever would. Rather than dismounting an existing horse regiment to furnish the men to create the mechanized regiment, the pro-horse elements within the cavalry branch wanted to stand up a deactivated regiment (15th, 16th, or 17th Cavalry Regiments) and recruit new men to fill its ranks.[25]

Throughout the 1930s, Van Voorhis, Chaffee, and other cavalry officers worked to develop and expand mechanized cavalry. In March 1932, even before the Army chose a regiment to transfer to Fort Knox, the War Department designated the post as the home of the 7th Cavalry Brigade (Mechanized). The then Chief of Cavalry, Major General Guy V. Henry, Jr., also informed Van Voorhis and Chaffee that as soon as they finished training their first mechanized cavalry regiment, a second regiment would be added to the brigade. Despite

23 "Mechanized Force Becomes Cavalry," *Cavalry Journal* 40 (May/June 1931), 6.

24 Chaffee was a U.S. Military Academy graduate (Class of 1906), whose father, Adna R. Chaffee, Sr., served as the U.S. Army Chief of Staff from 1904 to 1906.

25 Gillie, 52-54.

these assurances, however, a political battle erupted over which Army post (and therefore which congressman and senator) would lose a cavalry regiment to furnish one for Fort Knox.[26]

The 1932 congressional and presidential elections had more than one positive result for cavalry mechanization. The War Department chose the 1st Cavalry Regiment for transfer to Fort Knox, where it joined the remnants of the Mechanized Force. Then millions of dollars from the Public Works Administration were used to rehabilitate and expand Fort Knox.[27] However, many of the officers and enlisted men of the 1st Cavalry were far from happy with their assignment. When leaving Fort D.A. Russell in Marfa, Texas, many of the officers and enlisted men of the 1st Cavalry performed ceremonies more akin to "funeral services" than any traditional U.S. Army change of post ceremonies. Major Robert W. Grow, the S-3 (Operations and Training) for the Mechanized Force and later also for the 1st Cavalry, reported that most of the enlisted men of the 1st Cavalry were "... interested and welcomed the change ..." from horses. Most of the officers, however, were "... doubtful [and] showed more interest in their future assignments with horse units."[28]

Throughout 1933, the 1st Cavalry reorganized and trained in mechanized warfare, which was a learning experience for all concerned, because a completely mechanized regiment never before existed in the U.S. Army. After a year of reorganization and training, in May 1934, the 1st Cavalry Regiment (Mechanized) participated in maneuvers at Fort Riley to test the mechanized cavalry both in support of and against horse cavalry. Two horse cavalry regiments, the 2nd and 13th Cavalry, formed a provisional brigade to counter the 1st Cavalry during a portion of the maneuvers. The maneuvers took on two basic forms: exercises in which horse and mechanized units fought against each other and those in which the units fought alongside one another against other horse units. [29]

The results of the maneuvers, as presented in the *Cavalry Journal*, downplayed any accomplishments of the 1st Cavalry, and emphasized only mechanized cavalry's limitations. Almost no negative comments were made about horse cavalry and the overall conclusion seemed to be that mechanization gave

26 Gillie, 54-56; and Robert W. Grow, "Ten Lean Years: From the Mechanized Force (1930) to the Armored Force (1940)", 7. Robert W. Grow Papers, United States Army Military History Institute, Carlisle Barracks, Pennsylvania.

27 Gillie, 58-60.

28 Grow, 33; and Sawicki, 151.

29 "Cavalry Maneuvers at Fort Riley, Kansas, 1934," *Cavalry Journal* 43 (July/August 1934), 5.

more versatility to the horse cavalry.[30] Chaffee barely contained his anger at these statements.

> They seem blind to the possibilities of a mechanized cavalry. Those fellows at Riley ought to understand that the definition of cavalry now includes troops of any kind equipped for highly mobile combat and not just mounted on horses. The motto of the [Cavalry] School says, "Through Mobility We Conquer." It does not say, "Through Mobility on Horses Alone We Conquer."[31]

Grow believed that the performance of the 1st Cavalry impressed most junior officers, but that senior officers seemed unable to "… sense the inevitable."[32] As a result, mechanized cavalry continued to labor under many constraints.

While serving as the commander of the 1st Cavalry Division in 1935, Hawkins responded to a memorandum from the Cavalry Board at Fort Riley, which asked specific questions regarding the methods of divisional reorganization resulting in a more mobile structure. Hawkins rather dismissively referred to the 1st Cavalry Regiment (Mechanized) as the "mechanized force" and stated:

> Mechanized forces may assist but cannot replace cavalry on these cross country missions, because, in spite of unproven assertions that large numbers of mechanized forces can travel speedily across country, no reliance can be based upon these assertions. And, even though they were true, the rapid development in anti-tank weapons and armor-piercing bullets would make it extremely hazardous to put faith in a new organization of this kind for the accomplishment of great cavalry missions.[33]

Hawkins refused to acknowledge that mechanized cavalry traveled satisfactorily cross-country and again noted the vulnerability of mechanized vehicles but did not refer to the far greater vulnerability of horses and men. Hawkins went on to state that "... mobility of a cavalry division cannot be increased ...," which illustrated his inability to see cavalry as anything other than men on horseback.[34] Despite his apparent disregard for motor vehicles, he recommended that the

30 "Cavalry Maneuvers at Fort Riley, Kansas, 1934," 12-14.

31 Gillie, 68.

32 Grow, 50.

33 Hamilton S. Hawkins; Memorandum; "Reorganization of Divisions and Higher Units"; 25 November 1935, 4; Correspondence, 1921-1942; Office of the Chief of Cavalry, Record Group 177; National Archives and Records Administration, College Park, Maryland.

34 Hawkins, "Reorganization of Divisions and Higher Units," 4.

quartermaster company of each division should be completely mechanized. The closing sentence of Hawkins' memorandum speaks volumes about his opinions. "It would be easy to overdo the ... mechanization of the Army."[35]

In the late summer of 1936, the 7th Cavalry Brigade participated in the Second Army Maneuvers at Fort Knox and Camp Custer, Michigan. These maneuvers were the first time that mechanized cavalry was both supported and opposed by infantry, horse cavalry, and artillery. During the maneuvers, the 7th Cavalry Brigade was augmented by a battalion of motorized artillery from the 19th Field Artillery Regiment and two temporarily motorized battalions of the 201st Infantry Regiment (West Virginia National Guard). During the first phase of the maneuvers, held at Fort Knox, the 7th Cavalry Brigade was ordered to delay an advancing infantry corps and a horse cavalry brigade. Not only did the brigade succeed in delaying the enemy formations, but it also overran several of the enemy's infantry battalions. The second phase of the maneuvers, held at Camp Custer, produced largely the same results as the first, though the 7th Cavalry Brigade was saddled during this phase with horse cavalry and foot infantry, which limited its effectiveness.[36]

The result of the maneuvers was a series of recommendations by Colonel Bruce Palmer, then the commander of the 1st Cavalry Regiment, regarding the organization and equipment of the 7th Cavalry Brigade. The artillery battalion performed so well that Palmer believed it should be a permanent part of the 7th Cavalry Brigade. The two motorized infantry battalions also performed very well, but Palmer, while praising their performance, was careful not to request the permanent presence of infantrymen, which might ignite accusations that he was trying to recreate the Mechanized Force. Instead, he recommended that a rifle troop be included in each mechanized cavalry regiment to perform many of the duties of the motorized infantry. Palmer also noted that all of the units involved in the maneuvers were desperately short of anti-tank weapons, which he thought might have negated some of the 7th Cavalry Brigade's accomplishments.[37]

After the maneuvers, Van Voorhis, now a brigadier general who had returned to command the 7th Cavalry Brigade, made it his priority to secure another cavalry regiment to augment the brigade. The regiment most frequently mentioned for this purpose was the 4th Cavalry, stationed at Fort Meade, South Dakota. Its

35 Hawkins, "Reorganization of Divisions and Higher Units," 7.

36 Bruce Palmer, "Mechanized Cavalry in the Second Army Maneuvers," *Cavalry Journal* 45 (November/December 1936), 461-478.

37 Palmer, "Mechanized Cavalry in the Second Army Maneuvers," 474-477.

remote location meant that it had played little or no role in national defense, which made it ideal for transfer to Fort Knox. However, the congressman in whose district Fort Meade was located refused to agree to the plan and received sufficient support from his colleagues to block the move.[38] Unable to secure the 4th Cavalry, Van Voorhis and Major General Leon B. Kromer, then the Chief of Cavalry, suggested reactivating the 15th Cavalry Regiment, which required the existing horse cavalry regiments to contribute only a small cadre of officers and enlisted men. The remainder of the troopers would be recruited from civilian life, a process made easier by the fact that many former soldiers were unemployed as a result of the Great Depression. While this proposal seemed to be the perfect compromise, Congress refused to appropriate the funds.[39] Not until 1938 did Van Voorhis' request come to fruition when the brigade was expanded with the 13th Cavalry Regiment.

Despite having retired as a brigadier general in 1936, Hawkins' opinions were still respected by many cavalrymen, and he continued to share those opinions regularly in the *Cavalry Journal*. It was not until 1937 that Hawkins finally began to recognize that technological developments had markedly improved the effectiveness of tanks. His solution was to advocate the use of horse cavalry in support of tanks, much in the same way that infantry had been used to support tanks in World War I. The cavalry, Hawkins argued, could keep up with the tanks more easily and cheaply than infantry, since the infantry would have to be motorized if it were to keep up with the tanks.[40] Nevertheless, Hawkins continued to point out the shortcomings of the tank:

> The light tank cannot move cross-country on all kinds of ground with the celerity of cavalry. While moving to attack, the guns in the tanks cannot fire with accuracy, and if they halt to shoot, they are too easily hit by fire of anti-tank machine guns and cannon.[41]

Again, Hawkins pointed out weaknesses in mechanized vehicles but refused to acknowledge that horses and men are even more prone to these same weaknesses. He also claimed that the, "... operation of tanks exhausts their crews very soon

38 Gillie, 92-93; and Memorandum; "Data on the Mechanization of a Second Regiment of Cavalry"; Colonel Charles L. Scott to Major General Leon B. Kromer, 8 May 1936; Correspondence, 1921-1942; Office of the Chief of Cavalry, Record Group 177; National Archives and Records Administration, College Park, Maryland.

39 Gillie, 92-93.

40 Hamilton S. Hawkins, "We Must Have Cavalry," *Cavalry Journal* 46 (September/October 1937), 406.

41 Hawkins, "We Must Have Cavalry," 406.

in any extended operations."[42] This assertion was curious because it implied that somehow infantry and cavalry were less exhausted by combat than tankers.

Hawkins also criticized the thickness of tank armor. "Light tanks cannot be armored by more than a half inch of steel armor plate, if that much."[43] While that was true at the time the article was written, Hawkins was precluding the possibility of innovations that allowed for armor thickness to increase. Hawkins urged caution in changing horse cavalry to mechanized vehicles as the Europeans were then in the process of doing. "European armies are likely to find out that they have made a serious error in going blindly so far."[44] As far as American mechanization was concerned, he believed that "... when the tests of war have made the facts clear, we shall certainly regret having tried to replace cavalry with mechanization."[45] Hawkins' arguments suggest that his distaste for mechanized vehicles was based on his continued inability to see cavalry as anything other than men on horseback.

After he was appointed Chief of Cavalry in 1938, Major General John K. Herr[46] quickly demonstrated his commitment to horse cavalry despite the by-then obvious superiority of mechanized forces. For example, in a memorandum prepared for the Adjutant General of the U.S. Army in 1938, Herr admitted that mechanized cavalry possessed superior firepower, shock, and strategic and tactical mobility than horse cavalry. However, Herr also noted that mechanized cavalry was more sensitive to terrain and had less capacity for sustained independent action than horse cavalry.[47] Still, despite these rather significant acknowledgments and the recommendation that additional motor vehicles be purchased for the cavalry, he advised the Adjutant General that only one additional mechanized cavalry regiment should be formed and that in the National Guard.[48] Although aware of mechanization's benefits, Herr chose to give mechanized forces only token representation in the cavalry, which he decided should continue to be dominated by horses. According to Herr, the European horse cav-

42 Hawkins, "We Must Have Cavalry," 406.

43 Hawkins, "We Must Have Cavalry," 407.

44 Hawkins, "We Must Have Cavalry," 407.

45 Hawkins, "We Must Have Cavalry," 407.

46 Herr graduated from the U.S. Military Academy (Class of 1902) and served as a division chief of staff in World War I.

47 Memorandum; "Cavalry Requirements for the United States Army"; John K. Herr to the Adjutant General, 3; 5 August 1938; Correspondence 1935-1938; Willis D. Crittenberger Papers; U.S. Army Military History Institute, Carlisle Barracks, PA.

48 "Cavalry Requirements for the United States Army", 7.

alry was ineffective against mechanized forces due primarily, not to the horse's obsolescence, but to the lack of preparation on the part of the Europeans. He believed that this, naturally, was not the case with the American military, which he stated had refined horse warfare to an art since the Civil War.

In a 1938 *Cavalry Journal* article, Hawkins discussed European developments and accused the principal European powers of a "... lack of imagination or imagination gone wild ..." and a "... sheep-like rush to mechanization."[49] Hawkins referred to their mechanized cavalry units as "so-called cavalry," which again suggests that he was incapable of believing that cavalry could exist without horses. Despite the lessons of World War I, Hawkins dismissed the notion that reconnaissance was to be the principal role of the cavalry in the future. His vision was fixed on the role of cavalry during the American Civil War, particularly Brigadier General John Buford's delaying action at the Battle of Gettysburg. Despite this desire for the cavalry to have a role other than reconnaissance, Hawkins rejected the use of the light machine gun, which was perfectly suited for the sort of delaying actions he envisioned.[50] Furthermore, Hawkins believed that there were "too many" machine guns attached to horse cavalry units, which he thought slowed them down considerably.[51] Only a year after saying that armor plating could not go beyond half an inch, he noted that some tanks now boasted one inch of armor plating. Hawkins saw no problem with this because he believed that as armor got thicker, the vehicle got slower and would be of no threat in anything other than trench warfare.[52] He made this assertion even though mechanized vehicles were then actually increasing in speed. Hawkins continued to ignore technological developments in favor of his own bias – in the case of the European situation, a bias reinforced by nationalism.

Also in 1938, the War Department requested that both the Office of the Chief of Cavalry and the 7th Cavalry Brigade (Mechanized) submit plans for the creation of a mechanized cavalry division. The idea of a mechanized cavalry division had been discussed for years, but this was the first official inquiry into the possibility of forming such a division. Though Herr officially approved the resulting division organization, he privately disliked the idea of a mechanized cavalry division and did whatever he could to sabotage it. To Major Robert W.

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49 Hamilton S. Hawkins, "Imagination Gone Wild," *Cavalry Journal* 47 (November/December 1938), 491.

50 Hawkins, "Imagination Gone Wild," 495.

51 Hawkins, "Imagination Gone Wild," 495.

52 Hawkins, "Imagination Gone Wild," 497.

Grow, a pro-mechanization officer who was then serving in the Office of the Chief of Cavalry, Herr stated that the War Department would "... take a single horse soldier away over his dead body."[53] Additionally, Herr wanted to break up the 7th Cavalry Brigade by sending one of its regiments to Fort Riley or by sending the entire brigade to the Mexican border, where he believed it was of more use to national defense.[54] Either of these actions would have made it difficult or impossible to continue the development of mechanized cavalry doctrine.

In the *Cavalry Journal* in early 1939, Herr discussed the future of cavalry in light of international developments. Herr used the American Civil War and World War I as examples of the success or failure to use horse cavalry properly. He then stated that only the Polish and Soviet armies understood the proper use of horse cavalry and retained sufficiently large bodies of horse-mounted soldiers. Herr cautioned that "... any independent body of troops that expects to rely solely upon [mechanized] vehicles of any kind for an adequate ground reconnaissance under all conditions is courting disaster."[55] This demonstrated Herr's rather poor understanding of the military situations in Poland and the Soviet Union. The Poles, for instance, wished to mechanize far larger portions of their cavalry (only one Polish cavalry regiment had been fully mechanized by September 1939) but lacked both the funds and the industrial base to do so.[56] Herr's negative assertions were published the same year that the mechanized forces of Germany overran the horse cavalry of Poland.

Not long after his article appeared, Herr repeated his arguments regarding the limitations of mechanized forces before the Military Affairs Subcommittee of the Committee on Appropriations in the U.S. House of Representatives. Uncharacteristically, he began his remarks to the subcommittee by touting the development of mechanized cavalry.

> Our studies and experiments have convinced us that we can apply automotive machines to the execution of cavalry missions to a very considerable extent. We are satisfied that the iron horse is here to stay.[57]

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53 Grow, 76.

54 Grow, 76.

55 John K. Herr, "What of the Future?," *Cavalry Journal* 48 (January/February 1939), 4.

56 See: Janusz Piekalkiewicz, *Cavalry in World War II* (New York: Stein and Day, 1976); and Steven Zaloga and Victor Madej, *Polish Campaign, 1939* (New York: Hippocrene Books, 1985).

57 "Cavalry Affairs Before Congress," *Cavalry Journal* 48 (March/April 1939), 130.

Nevertheless, Herr also believed that mechanized cavalry should only exist as a small portion of the cavalry branch and that it was most effective in cooperation with horse cavalry. When a congressman asked him whether or not he envisioned the complete mechanization of the cavalry, Herr replied, "The answer is distinctly no. No vehicle can go over the difficult country that a horse can."[58] Another congressman challenged Herr's defense of horse cavalry by saying, "You do not mean to state that you are going to lead a Charge of the Light Brigade in the face of the modern machine gun?"[59] Herr denied that possibility but was unable to convince the congressmen that horse cavalry was still effective in the face of modern weaponry, especially as a result of the lack of use of horse cavalry in World War I.

Despite Herr's distrust of mechanization, he preferred to maintain mechanized vehicles under his command, subordinate to horse cavalry, rather than to allow mechanized forces to become a separate branch within the Army. In this context in 1939, Herr wrote to Brigadier General Adna R. Chaffee, Jr., then the commander of the 7th Cavalry Brigade (Mechanized) at Fort Knox, Kentucky. Herr informed Chaffee that the projected plans for the expansion of the mechanized cavalry brigade into a division had been disapproved by the Chief of Staff, General George C. Marshall. Not surprisingly, Chaffee was not told that part of the reason for Marshall's decision rested on Herr's intransigence and refusal to allow any horse cavalry regiments to be mechanized. Nevertheless, Chaffee had already been informed of Herr's efforts by colleagues in the War Department. Herr told Chaffee that despite the decision not to expand the brigade, money had still been appropriated for brigade improvements. The brigade was expanded with a brigade headquarters troop, third squadrons for the 1st and 13th Cavalry Regiments, and several motorcycle formations.[60] While the first two points were indeed improvements, the motorcycles were viewed by most mechanized cavalry officers as hindrances. Herr wanted to replace many of the "combat cars" with motorcycles, which mechanized cavalry officers believed diminished their firepower and made them more vulnerable to small arms. Herr concluded his letter by mentioning that there had been some talk "... unofficially, about the desirability of organizing a [new and independent] mechanized force."[61] Clearly, Herr

58 "Cavalry Affairs Before Congress," 131.

59 "Cavalry Affairs Before Congress," 131.

60 Letter; John K. Herr to Adna R. Chaffee, Jr.; 1 June 1939; Correspondence, 1921-1942; Office of the Chief of Cavalry, Record Group 177; National Archives and Records Administration, College Park, Maryland.

61 Letter; Herr to Chaffee; 1 June 1939.

was disturbed by this possibility and was trying to appease, with the projected improvements, the most likely commander of any such force – namely Chaffee.

Though Herr consistently refused to compromise on horse cavalry, the German invasion of Poland changed Herr's attitude toward Chaffee somewhat. "[Herr] is afraid of Chaffee, afraid Chaffee will take advantage of the looked for expansion of mechanization to go for a separate corps."[62] Despite this attitude, little progress was made toward the creation of the mechanized cavalry division during the remainder of 1939. If Herr was indeed afraid of Chaffee, his loyalty to horse cavalry was still a more powerful motivating factor.

In August 1939, the First Army held maneuvers in the vicinity of Plattsburg, New York, which essentially pitted the Regular Army against the National Guard. During the maneuvers four infantry divisions (26th, 27th, 43rd, and 44th Infantry Divisions – National Guard units from Massachusetts, New York, Maine, Vermont, Connecticut, and Rhode Island), a cavalry regiment (101st Cavalry Regiment – New York National Guard), and a tank battalion (66th Infantry Regiment – Light Tanks) faced one infantry division (1st Infantry Division), an infantry brigade (18th Infantry Brigade, 9th Infantry Division), and the 7th Cavalry Brigade. For the 7th Cavalry, these maneuvers presented the opportunity to perform independent mechanized action over diverse terrain and to demonstrate their abilities to a skeptical audience. The brigade performed far beyond expectations and surprised many Army officers who had no experience with mechanized units. Chaffee noted that to protect against mechanized attack during the maneuvers, the opposing force used as much as 50% of their artillery in an anti-tank role, which diminished their ability to provide traditional artillery support. At one point, the brigade was halted since it was about to overrun the rear area of the opposing force and, therefore, prematurely end the maneuvers.[63]

Two weeks after the German invasion of Poland on 1 September 1939, Chaffee wrote a detailed memorandum to the Adjutant General, which he routed through Major General Daniel Van Voorhis, who was then the V Corps commander and Chaffee's immediate superior, on the expansion of mechanized cavalry for future warfare. Emboldened by the recent performance of mechanized units both in exercises and in foreign combat, Chaffee no longer couched his opinions:

> It is my belief also, based upon maneuvers and the war reports, that in any important war involving armies, and fought in a terrain

62 Grow, 85.

63 Adna R. Chaffee, Jr., "Seventh Cavalry Brigade at the First Army Maneuvers," *Cavalry Journal* 48 (November/December 1939), 450-461.

> where important wars are fought, mechanized cavalry is a vastly more powerful, mobile and decisive force than an equal or greater force of horse cavalry.[64]

He then blamed resistance to the expansion of the 7th Cavalry Brigade on individuals (though without mentioning any names) within the War Department who were resistant to the concept of mechanized warfare. Chaffee also provided a detailed list of recommendations, which included approval of the mechanized cavalry division organization that had already been submitted and providing sufficient officers and enlisted men from existing Regular Army cavalry regiments for the formation of the division.[65]

Van Voorhis, in his capacity as Chaffee's immediate superior, endorsed Chaffee's comments completely, with the additional observation that he believed that the cavalry and infantry should continue to develop mechanized forces separately because they performed different missions.[66] The Adjutant General forwarded the memorandum to Herr for his comments as the Chief of Cavalry. Herr began by agreeing with the general principles put forth in Chaffee's memorandum but then disagreed on several crucial points. Herr refused to allow any existing horse cavalry regiments to be used for mechanization and he refused to release any cavalry officers or enlisted men for that purpose either. He stated that any increase in mechanized personnel should come from reserve officers, recently retired officers, National Guard personnel, and recruits. Herr ended his comments by indirectly criticizing Chaffee for submitting the proposal directly to the Adjutant General rather than going through what he considered the proper channels by first submitting it to the Office of the Chief of Cavalry.[67] Chaffee and Herr had now publicly expressed their opinions not only about the issue of mechanization but also concerning each other.

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64 Memorandum; "Some Observations and Recommendations Pertinent to Any Future Expansion and Development of Mechanized Cavalry Which May Be Contemplated by the War Department"; Adna R. Chaffee, Jr., to the Adjutant General, 15 September 1939; Correspondence, 1921-1942; Office of the Chief of Cavalry, Record Group 177; National Archives and Records Administration, College Park, Maryland.

65 "Some Observations and Recommendations Pertinent to Any Future Expansion and Development of Mechanized Cavalry Which May Be Contemplated by the War Department."

66 Daniel Van Voorhis; Endorsement of Memorandum by Adna R. Chaffee, Jr., 18 September 1939; Correspondence, 1921-1942; Office of the Chief of Cavalry, Record Group 177; National Archives and Records Administration, College Park, Maryland.

67 John K. Herr; Endorsement of Memorandum by Adna R. Chaffee, Jr., 9 October 1939; Correspondence, 1921-1942; Office of the Chief of Cavalry, Record Group 177; National Archives and Records Administration, College Park, Maryland.

Unbeknownst to Chaffee, on 3 October 1939, Herr had acknowledged the need for an increase in mechanized cavalry in a three-page letter to Marshall. Herr urged the immediate expansion of the 7th Cavalry Brigade into a mechanized cavalry division. He argued that it might be necessary to envision the formation of as many as four mechanized cavalry divisions if the Army expanded to the size of four field armies. Herr stressed the urgency of the necessary expansion by stating:

> When consideration is given the fact that except for a few scattered tank companies and two or three incomplete battalions, our entire army includes only one mechanized brigade, as contrasted with at least ten German armored divisions, for example, the urgency of this situation cannot be escaped.[68]

Despite these requests for expansion, Herr continued to refuse to dismount horse cavalrymen for mechanized duty. "Inasmuch as mechanization is designed to increase the scope of existing arms and not to replace them it is not considered that personnel should be provided from any existing units of any arm but should be in addition thereto."[69]

Interestingly, only a few months later in January 1940, Herr appeared to have changed his mind regarding the accomplishments of the 7th Cavalry Brigade during the Plattsburg Maneuvers of the previous August. In a letter to Brigadier General Frank M. Andrews, U.S. Army G-3, Herr complained that the terrain of the maneuvers was "... entirely unsuited to the action of mechanized cavalry ...," although the 7th Cavalry Brigade had distinguished itself and performed beyond expectations.[70] He then bitterly complained about the loss of experienced cavalry officers to training and schooling duties, which he believed forced the use of a National Guard horse cavalry regiment during the maneuvers. The poor performance of horse cavalry, therefore, he blamed on the poorly trained and led National Guardsmen rather than on any deficiency of horse cavalry.[71] As with Europe, Herr believed it was not the horses that were the problem, but rather poor leadership and training.

In May 1940, Hawkins discussed the early phases of the German campaign

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68 Letter; John K. Herr to George C. Marshall; 3 October 1939. Cullum Number 4112. John K. Herr Papers. Archives of the United States Military Academy, West Point, New York.

69 Letter; Herr to Marshall; 3 October 1939.

70 Letter; John K. Herr to Frank M. Andrews; 5 January 1940. Cullum Number 4112. John K. Herr Papers. Archives of the United States Military Academy, West Point, New York.

71 Letter; Herr to Andrews; 5 January 1940.

in France in an article in the *Cavalry Journal*. Hawkins began his column by stating that nothing up to that point (20 May) had disproved his continued statements regarding the horse in modern warfare. He greatly criticized the French for relying far too heavily on static defenses, namely the Maginot Line. Hawkins criticized the British for permitting "... such pseudo military experts as Liddell Hart and others to influence the military principles under which they were arming, organizing, and training."[72] Britain and France were also criticized for their decision to abandon the horse and their failures were, in his opinion, primarily due to that decision. Even the Germans were criticized because they "... may find that despite their success so far, they need cavalry to make good the penetrations in an enemy's line accomplished by their mechanized forces."[73] Thus, despite the overwhelming successes of mechanized forces in Poland in 1939 and France in 1940, Hawkins continued to refuse to acknowledge these achievements.

Also in May 1940, the final act in the fight over the future of cavalry in the U.S. Army occurred immediately after the Third Army Maneuvers in Louisiana. During the maneuvers, the IX Corps with the 7th Cavalry Brigade was opposed by the IV Corps with the infantry's Provisional Tank Brigade (commanded by Brigadier General Bruce Magruder, the most senior infantry tanker).[74] The first phase of the maneuvers involved these larger forces engaging one another as had happened in earlier maneuvers, but the second phase was truly revolutionary. During the second phase, the 7th Cavalry Brigade was combined with the Infantry's Provisional Tank Brigade to form an *ad hoc* division – the first division-sized mechanized formation in U.S. Army history. During the last exercise of the maneuvers, the provisional mechanized division launched an attack on a prepared enemy position. The mechanized force penetrated the position and was thoroughly routing its opponents when the maneuvers ended.[75]

On 24 May 1940, the final day of the maneuvers, Chaffee, Magruder, Major General Stanley D. Embrick (commander of the Third Army), Brigadier General Frank M. Andrews (Assistant Chief of Staff for Operations and Training), and Colonel George S. Patton (an umpire at the maneuvers) met in the basement of the Alexandria (Louisiana) High School to discuss the future of mechaniza-

72 Hamilton S. Hawkins, "General Hawkins' Notes," *Cavalry Journal* 49 (May/June 1940), 269.

73 Hawkins, "General Hawkins' Notes," (May/June 1940), 269.

74 The Provisional Tank Brigade (66th and 67th Infantry Regiments – Light and Medium Tanks, respectively) had been organized especially for the maneuvers.

75 Gillie, 162-163; and John T. Broom, *Commander's Vision In Blue and Grey: The Roles of Adna R. Chaffee, Jr., James H. Wilson, and the American Civil War in the Development of American Armor Doctrine* (Ph.D. diss., The Union Institute, 1993), 216.

tion. Significantly, neither the Chief of Cavalry nor the Chief of Infantry, both of whom attended the maneuvers, were invited to this impromptu meeting. All the participants agreed that, if mechanization were to succeed in the U.S. Army, it had to be taken out of the hands of the cavalry and infantry. In the opinion of the participants, both the cavalry and infantry branches continued to view mechanization as only an auxiliary to their existing forces, rather than as a revolutionary new weapon.[76] The original decision to allow the cavalry and infantry to develop different mechanized vehicles was based on the idea that weapons needed to fit doctrine, rather than the other way around. By 1940, the supporters of mechanization believed that while mechanized doctrine and vehicles evolved during the Interwar Period in other nations, the opponents of mechanization prevented a similar evolution in the U.S. Army.

After the meeting, Andrews wrote to both Herr and Lynch, asking the branch chiefs to give their views on a change in the Army's policy regarding mechanization. Lynch replied that the German Panzer units were, in effect, mechanized cavalry. He believed that it was incorrect to shape an organization on the basis of new weaponry, but rather that weapons should be adapted to missions.[77] Herr generally echoed the Chief of Infantry's reply. He believed that the then-current policy was sound and that it was a lack of funds, rather than the need for a new branch, that had delayed the development of mechanized forces. Herr also repeated Lynch's comment regarding the German forces.

> Examination of the employment of German Armored Divisions both in Poland and France show clearly that they were used on Cavalry missions. ... There is no valid reason for setting up a separate corps for the development and training of units to be used in the execution of cavalry missions.[78]

He then repeated his request that the 7th Cavalry Brigade be expanded to a division, though he again made the comment that additional mechanized cavalry formations should be "... provided in proportion to successive increases in the army."[79] Therefore, even at this late date, he still did not wish to dismount any other horse cavalry regiments to permit their mechanization.

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76 Gillie, 163-164.

77 John K. Herr, "Armored Force," 8. Cullum Number 4112. John K. Herr Papers. Archives of the United States Military Academy, West Point, New York.

78 Memorandum; John K. Herr to Frank M. Andrews; 3 June 1940; Correspondence, 1921-1942; Office of the Chief of Cavalry, Record Group 177; National Archives and Records Administration, College Park, Maryland.

79 Memorandum; Herr to Andrews; 3 June 1940.

On 10 June 1940, a more formal conference regarding the progress and future of mechanization in the U.S. Army was held in Washington, DC, but this time both Herr and Lynch were invited. Andrews informed the conference participants that the only issue that was not up for debate was that two mechanized divisions were to be formed, one at Fort Knox with the 7th Cavalry Brigade as its nucleus and the other at Fort Benning with the Infantry's Provisional Tank Brigade as its nucleus. Both Herr and Lynch opposed the formation of a new branch because each believed that the cavalry and infantry were developing different kinds of mechanized vehicles for vastly different missions. Though the conference ended without any conclusive decision, Herr believed that Marshall, who he thought was rather conspicuously absent from the conference, had already made up his mind in favor of creating a new branch.[80] On 24 June 1940, Marshall announced his decision to create a separate Armored Force[81] with Chaffee as its first chief.[82]

After the organization of the Armored Force, the cavalry struggled to find a viable place on the modern battlefield. With the loss of the 7th Cavalry Brigade (which became the basis for the 1st Armored Division), the cavalry branch sought another way to integrate horse and mechanized formations. The solution was the formation of the horse-mechanized regiment. The horse-mechanized regiment consisted of one squadron of truck-borne horse cavalry and a second squadron of mechanized cavalry transported in half-tracks. These horse-mechanized regiments were intended to be used exclusively as corps-level reconnaissance. Ultimately, a total of two Regular Army (4th and 6th Cavalry Regiments) and seven National Guard (101st, 102nd, 104th, 106th, 107th, 113th, and 115th Cavalry Regiments) regiments were reorganized as horse-mechanized regiments. The concept ultimately proved unsuccessful, and the horse-mechanized regiments were reorganized as mechanized reconnaissance groups during World War II.[83]

The General Headquarters Maneuvers of 1941 were the most extensive U.S. Army maneuvers ever conducted to that point. During September and November 1941, mock battles were fought in Louisiana and the Carolinas to test the Army's equipment and organization. For the cavalry, the maneuvers were a do-or-die situation. If the horse cavalry failed to perform well, there was little doubt that the entire cavalry would be swiftly dismounted. During the Sep-

80 Herr, "Armored Force," 10-11.

81 The name 'Armor' was chosen for the new force in order to avoid using the terms 'Mechanized', previously used by the cavalry, or 'Tank', previously used by the infantry.

82 Gillie, 166-168.

83 Stubbs and Connor, 70; and Sawicki, 114.

tember Phase of the maneuvers in Louisiana, the 1st and 2nd Cavalry Divisions and the 56th Cavalry Brigade (Texas National Guard) performed beyond expectations, while the horse-mechanized regiments, which served as corps reconnaissance units, also performed well. The performance of the horse-mechanized regiments was particularly gratifying to Herr because he believed that it proved that his ideas regarding mechanization had been correct. Nevertheless, Captain Bruce Palmer, Jr., whose father, Colonel Bruce Palmer, had previously commanded the 1st Cavalry Regiment (Mechanized), commanded a troop of the 6th Cavalry Regiment during the maneuvers and was less exuberant about the performance of the horse-mechanized regiments. He noted that, in practice, the horse squadron tended to be ignored, while the mechanized squadron became the legitimate striking power of the regiment.[84]

During the November Phase of the maneuvers in the Carolinas, the 1st and 2nd Cavalry Divisions did not participate. Herr saw this as an attack on the horse cavalry, especially in light of their excellent performance during the first phase of the maneuvers. In addition, he believed that "... artificial restrictions were imposed which would have been an absurdity in real warfare."[85] Also during the second phase of the maneuvers, the 6th and 107th (Ohio National Guard) Cavalry Regiments, which were both horse-mechanized regiments, exchanged squadrons so that 6th Cavalry had two mechanized squadrons and the 107th Cavalry had two horse squadrons. Not surprisingly, the 6th Cavalry performed far better during this phase of the maneuvers than the 107th Cavalry did.[86] Both regiments were effectively half Regular Army and half National Guard, yet the mechanized regiment had outperformed the horse regiment. This negated Herr's complaint about the poor training and leadership in National Guard regiments, which he made following the Plattsburg Maneuvers in 1939. Nevertheless, Herr complained that the "... maneuvers were rigged to limit activities of the cavalry, for the pressure was on from certain quarters to eliminate the mounted service."[87] In a formal written evaluation of all of the forces that participated in the maneuvers, Lieutenant General Lesley J. McNair, the director of the GHQ Maneuvers, noted that while horse cavalry had performed "magnificent" physical feats during the Louisiana phase, none of their actions had equaled the

84 Christopher R. Gabel, *U.S. Army GHQ Maneuvers of 1941* (Washington, DC: Center of Military History, United States Army, 1991), 118-119.

85 John K. Herr and Edward S. Wallace, *Story of the U.S. Cavalry, 1775-1942* (New York: Bonanza Books, 1984), 250.

86 Gabel, 127-128.

87 Herr, *Story of the U.S. Cavalry,* 250.

accomplishments of the mechanized cavalry or armored forces.[88] Despite the excellent performance of the 1st and 2nd Cavalry Divisions, as well as the 56th Cavalry Brigade, the superior performance of mechanized cavalry and armored formations rendered any continued investigation of horse cavalry superfluous.

As the National Guard and Organized Reserve cavalry regiments were called into active federal service from 1940 onwards, they found that the senior leadership of the army had abandoned horse cavalry doctrine. The Organized Reserve cavalry regiments were then disbanded, and their assets were used to form Coast Artillery, Field Artillery, Tank Destroyer, and Signal Aircraft Warning units. In contrast, the Regular Army and National Guard cavalry regiments served as dismounted (infantry) regiments in the China-Burma-India or Pacific Theaters, or as either armored battalions or mechanized reconnaissance groups in Europe.[89] Only one horse cavalry unit of the U.S. Army saw combat during World War II. The 26th Cavalry Regiment (Philippine Scouts), which was composed of American officers and Filipino NCOs and enlisted men, fought horse-mounted against the Japanese during the Philippine Campaign.

During the Interwar Period, the debate over cavalry mechanization went through three distinct phases. During the first phase (1920 to 1928), most cavalry officers believed that it was technologically impossible to mechanize the cavalry completely. Tanks were too slow and mechanically unreliable to perform traditional cavalry missions of reconnaissance, pursuit, and exploitation. During the second phase (1928 to 1938), most cavalry officers felt that it was financially/industrially impossible to mechanize the cavalry completely. Some radical new designs meant mechanized vehicles could perform cavalry missions, but the tiny and chronically underfunded U.S. Army would never be able to afford more than a token number of vehicles. During the third and final phase (1938 to 1942), because of the rebirth of American manufacturing, most cavalry officers believed that it was now both technologically and financially/industrially possible to mechanize the cavalry completely. Likewise, the vehicles themselves were capable of outperforming horse cavalry on the same missions. The answer to the original question "What is cavalry?" was aptly answered by the successes of the armored and mechanized forces of World War II. Cavalry was any force of mounted soldiers performing cavalry missions. Only the most dyed-in-the-wool pro-horse elements refused to see that reality.

88 Gabel, 171.

89 Stubbs and Connor, 58-74.

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Argentine Cavalry modernization process

Alejandro Amendolara

1 Introduction

Prior to the War of the Triple Alliance against Paraguay (1864-1870), the Argentine Republic had an army that barely existed as such, based mainly on provincial militias. This situation generated the concern of the rulers to accelerate the formation of a national army and a navy that would be able to face any regional conflict that might arise, especially over the Patagonia.

At the beginning of the twentieth century, under the presidency of General Julio Argentino Roca, of great prestige in society, the Argentine Army underwent an important modernization process, which corresponded to the wave of economic progress of the Argentine Republic. The circumstances of the rivalry with Chile were not unrelated either, for which the National Government prepared itself, acquiring new armaments and hiring a German advisory mission for the Army War College[1] and establishing compulsory military service for all citizens in 1901. President Roca appointed Colonel Pablo Ricchieri to direct the purchases of armaments and thus the army carried out the profound transformation of the beginning of the century, showing a drive and sagacity that spoke highly of the chiefs of the time. The weapons purchased were state-of-the-art and in many cases few countries possessed them, apart from Argentina. The same happened with the combat plans, the war hypotheses, programmed with intelligence and imagination.[2] Among one of Ricchieri's various measures, the Regiment of Grenadiers on Horseback, created by General José de San Martín in 1812, was reinstated as the escort of the President of the Republic, replacing the *French-style* cuirassiers used until then.

With respect to the cavalry, the experience and regulations of the last European wars, especially the Franco-Prussian War of 1870, were introduced. In this

1 Picciuolo, José Luis, *La Caballería Argentina en la Historia del Ejército*; p. 50.

2 Scenna, Miguel Ángel; *Los Militares*; p.143.

conflict, the firepower of artillery and the incipient machine guns had limited massed mounted charges to minor fractions.[3] Consequently, the French influence on the Argentine army declined and the German influence gained ground, with a deepening of professionalism among the ranks of the army.

On August 17, 1904, the Cavalry School was created and, following the impulse of the modernization of the Army, a renewed professional spirit among its troops was energized. The students, officers and non-commissioned officers of the cavalry regiments received during the courses a series of valuable knowledge. Among them, tactical regulations, field service, historical review of the cavalry, hippology, training, horsemanship and fencing. In addition, the training of artillery cattle and the training of blacksmiths and bugle masters, and the teaching of the German language to select students who would travel to perfect their skills in Germany, would also be contemplated.[4] The debates on the future of the Cavalry, which had begun to take shape at the end of the nineteenth century due to the development of firearms, reached their peak especially due to the experiences of the World War One that reached the country through the German instructing officers and the reports of the Argentine military attachés in Europe.

2 Experiences from World War One

The Great War that was shaking the world was followed with expectation by the Argentine military, who made judgments about the events and valued the experiences, such as General Allaria in reference to the cavalry: "the lessons on the use of this weapon given by the current European war, have in this country [Argentina] only a relative value, because in our extensive territory and dilated borders the war of positions will not be the norm".[5] This statement showed that the development of the war in Europe was beginning to influence the transformation process, and would increase its influence after 1918 with the end of the war, introducing new challenges for the development of modernization, since it was necessary to attend to the innovations dictated by the European war with an effort to adapt to the probable operational environment of Argentina, but, what was even more complex, without having concluded the original process of professionalization initiated in 1901. It is important to clarify that the World War One introduced substantial technological changes, but applied the tactical

3 Picciuolo, *ob.cit*., p.50.

4 Picciuolo, *ibid*., p.51.

5 Comisión del Arma de Caballería San Jorge; *Historia de la Caballería Argentina*; Vol. II; p.11

and strategic concepts that had been observed since the Franco-Prussian War of 1870, and on which the Argentine Army laid the foundations for change from the beginning, although irregularly and incompletely.[6]

World War One incorporated revolutionary experiences linked to the importance of firepower. The cavalry had to fight applying the doctrinal concept of mounted movement and combat by foot fire. Old cavalrymen still remember those swift movements at trot and gallop that culminated with *"putting foot to ground for combat"*. Then to mount again, as the dragoons had traditionally done for several centuries.[7] The recent Great War imposed its parameters on the theory and practice of military conceptions. Infantry gained a singular preeminence and the war of positions displaced the concepts of mobile warfare. The appearance of armored vehicles and the widespread use of railcars revolutionized ideas that had seemed unshakable. The European conflict had demonstrated the importance of aviation as an offensive weapon, which made it advisable not to neglect this aspect within the armed forces. At the beginning of 1920, the Aviation School was replaced by the Army Aeronautics Directorate, whose first head was Colonel Enrique Mosconi, who founded the Aviation Group Nbr. 1, which became the fifth weapon service within the Army. From the operational perspective and the technological development, mainly represented by the massive use of firearms and the use of aircraft in operational missions (experimented by the military forces after World War One), the use of the Cavalry Arm was framed as follows: *Army Cavalry*, with its primary mission of distant operational scouting and participation in operations in the depth of the device for the destruction of enemy army cavalry; and *Divisional Cavalry*, with primary responsibility for operational close scouting and, eventually, participation in operations as a means of economy of forces.

3 Purchase and renewal of military equipment Law (1923)

In 1922, General Agustín P. Justo, an active and dynamic military engineer, was appointed as Minister of War of the Nation. He tried to recover the time of lag that the armed forces had suffered since the World War One, reintroducing the pace and tone that had prevailed until 1916. Under his administration, the Secret Law of Armaments Nbr. 11,266 of 1923 was passed, which created the

6 Cornut, Hernán; *Pensamiento Militar en el Ejército Argentino (1920-1930): La Profesionalización, Causas y Consecuencias*; p.75.

7 Picciuolo, *ob.cit*., p.52.

Permanent Technical Commission of Armaments, which was to study the means and plans to keep equipment up to date, and the Commission of Foreign Acquisitions, which was to purchase them in industrial countries, according to the list passed by the former.[8] In any circumstance, and in spite of the impulse given by the law, the purchase of armaments proceeded in a conservative manner with a certain prudence, buying equipment that had been tested beyond any doubt and discarding the most innovative items. Thus, no combat tank were incorporated, considered at the time more a curiosity, a mobile accessory of the infantry, without realizing the enormous possibilities of the weapon. This lack of vision also extended to the planning, with a marked tendency to imitate what had happened in Europe, as if the circumstances of the terrain, distances, population density and communications were the same, or only similar, in this part of the world.[9] By 1928, six Crossley armored cars, of British origin, had been acquired and assigned to several cavalry regiments for field exercises. Mosconi had an acute understanding of our dependence and wished to overcome it as the only possibility of gaining full sovereignty. Mosconi wanted to lay the foundations for national self-sufficiency according to the country's resources, while Justo, as Minister of War, limited himself to continue buying arms as at the beginning of the century, without trying to stop depending on industrial countries. Nevertheless, during Justo's administration as minister in January 1925 the Aeronautical Service was created, and in October 1927 the inauguration of the first aircraft factory in Argentina took place.[10]

However, there was a source of information that put the Argentine military on alert, which made evident the unprotected state of its western frontier, and which would require immediate preventive action. At the end of 1929, the German government secretly communicated to the Argentine President Hipólito Irigoyen, through General Severo Toranzo, General Inspector of the Argentine Army, who had just arrived from Germany, that Chile was planning a surprise invasion of Patagonia. General Toranzo had warned that Chile was buying weapons in large quantities, including mountain artillery, machine guns and aviation materiel.

The information received stated that Chile was gathering troops and supplies in the Andean mountain passes between Puerto Montt and Neuquén and Río Negro, and Río Aysén and Comodoro Rivadavia, in the Patagonia. There was a

8 Scenna, *ob.cit*., p.143.

9 Scenna, *ibid*., p.143.

10 Scenna, *ibid*., p.145

warning about the planning of a bombardment on Argentine territories totally defenseless, since there were no Argentine military garrisons south of Bahía Blanca, where the 5th Infantry Regiment was located. On its side, Chile had erected a chain of military garrisons extending south to Punta Arenas, and air bases in Temuco, Puerto Montt and Aysén. In the light of this information, an exploration of the Andes region was ordered, and Fairey IIIF naval seaplanes were sent, equipped with cameras to take aerial photographs of the Chilean valleys off the provinces of Neuquén and Río Negro. Once the photographs were developed and analyzed, there was evidence of a strong presence of Chilean troops estimated between 20,000 and 30,000 men, as well as squadrons of military aircraft in the area of Paso del Arco, in Neuquén, and in Aysén. Between the border of Neuquén with Chile and Bahía Blanca, the main port of the Argentine Navy, there was not a single military detachment, and the Argentine aviation was weak, antiquated and deficient and could not compete with the most modern Chilean aircraft. The Chilean aircraft were in a position to attack and damage the naval base of Puerto Belgrano, a site for the maintenance and repair of the large sea units Presumably the targets would be the harbor cities of Bahía Blanca and Comodoro Rivadavia, on the Atlantic coast.

The immediate deployment of troops, including a cavalry regiment, towards Neuquén and the mobilization of the navy in Puerto Belgrano, removed the surprise factor, deterring the Chilean president Carlos Ibáñez del Campo, so the invasion did not take place. This situation of an imminent invasion by Chile, made the Government aware of the state of defenselessness of the Argentine territories south of Bahía Blanca, and that urgent measures should be adopted in the deployment of Army units and the reviewing of their equipment.

4 Introduction of the first armored vehicles

In the period between the two world wars (1919-1939), the debate increased in several countries on the need to use armored vehicles to return to the cavalry the speed and mobility that had characterized it in previous times. For thinkers such as Liddell Hart, Fuller, Guderian and De Gaulle, an "armored war" was envisaged, arguing that the tank should not only be a destroyer of machine guns, but the main actor in future battles. They also had opponents and, for them, as had happened in the Great War, the tank would continue to be a simple support for the infantry.[11] With the spread of these new doctrines of military thinking,

11 Picciuolo, *ob.cit*., p.53.

and a reassessment of the lessons of the World War One, Argentina decided in the mid-1930s to become equipped with tanks. Until then, the discussions had not reached such relevance in the Argentine Army, which barely had the Crossley armored cars of the World War One. Eventually the decision was made and in 1937, twelve Vickers Carden-Lloyd light tanks were purchased, constituting the first armored combat vehicles on which it was possible for testing. They were of the light type, armed with a machine gun and similar to those that had fought in the Chaco War (1932-1935) on the Bolivian side.[12] For the National Independence military parade in Buenos Aires, on July 9, 1938, more than 15,000 troops participated, with the twelve Vickers tanks closing the parade, in a formation of four lines of three tanks each.

The Argentine Army's project was to use the twelve Vickers for training and to gradually train the personnel for the armored vehicles, in order to later purchase, in a quantity of 160 units, armored vehicles of superior characteristics, having their eyes set on the Czechoslovakian tank LT 38 (or Prague TNH), similar to those that Peru had purchased (38 armored vehicles) in 1938. Unfortunately, the purchase could not materialize, due to the German invasion of Czechoslovakia in 1938 after the Munich Conference, and the subsequent outbreak of the Second World War. This choice would not have been wrong, since Germany used with great success these Czech tanks during the first campaigns of the war in 1939 and 1940, under the designation of PzKpfw 38 (t).

The National Government authorized for October 1936 the conduct of large maneuvers of the Argentine Army in the provinces of Cordoba and San Luis, with the purpose of familiarizing senior officers in the handling of large forces and demonstrating the capabilities of the motorized infantry. The selected area was ideal for cavalry and motorized forces during the dry weather season. There were 1,200 vehicles and 65 aircraft deployed for maneuvers. The troops as a whole showed themselves to be physically fit, well disciplined, and the cavalry well assembled, with most of the artillery hypo-mobile. The US military attaché's impression of the maneuvers was that the Argentine Army was better trained and conducted than the Brazilian Army where he had been a few years earlier when he served as military attaché in Brazil, and concluded his report by noting that the officers and troops of the Argentine Army were better educated, more alert, and of a finer class.[13] The Brazilian General Staff, when comparing the military capabilities of Argentina with those of his own country, concluded

12 Picciuolo, *ob.cit*., p.53.

13 Rauch, George V., *La Argentina entre dos guerras. 1916-1938 – De Irigoyen a Justo*, p.231.

that there was an abysmal difference in favor of the Argentines, due to their organization and their ability to mobilize reserves, in addition to their superior artillery.[14] In 1938 the Vickers tanks participated in the cavalry maneuvers carried out in the Province of Entre Rios, where they performed well in rough terrain and stream crossings.

By September 1, 1939, at a time when Germany was invading Poland, the armored force of the Argentine Army was limited to a dozen Vickers Carden Lloyd tanks and half a dozen armored vehicles. Given the size of the country and the extension of its borders, Argentina required a more powerful, modern and numerous armored force for its Army.

5 The World War Two and its impact on South America

Following the German invasion of France in May 1940, the United States felt threatened since only the Atlantic Ocean separated them from the conflict, thus creating the need to warn the other countries of the American continent, in order to create a common defense alliance.

On May 24, 1940, the US Embassy delivered a note to the Argentine Foreign Ministry expressing its concern for the position adopted by the government in view of the critical aspect that the conflict had assumed in Europe. Argentina planned to follow the same neutrality policy as it had in the World War One, but changes in the World and an unwillingness of the part of the United States to understand Argentina's position caused considerable, long-term ill will.[15] On March 11, 1941, the U.S. Congress passed the Lend and Lease Act, entering into a sort of semi-belligerence that would eventually conclude with the attack on Pearl Harbor in December of the same year. The consequences of this policy were unforeseen in Latin America. The benefited countries obtained modern equipment for their armed forces, thus altering the military balance in the region. In this period, Argentina tried to reconcile the differences that separated it from the aspirations of the United States for the adoption of a more committed policy, and thus avoid its growing military disadvantage with the neighboring countries, by means of the American aid of the Lend and Lease.

In January 1942, the United States used the Third Meeting of Foreign Ministers in Rio de Janeiro to confront Argentina. Were Argentina to refuse a break in diplomatic ties with Germany, there would be no more U.S. military aid at pre-

14 Rauch, *ibid*., p.232

15 Leonard, Thomas M. and Bratzel, John M. (Editors); *Latin America during World War II*, p.13

cisely the moment when such assistance to Brazil was on rise. Argentine president Ramón Castillo faced a dilemma: The United States demanded a diplomatic break with the Axis before it would resume aid, but the Argentine military had demanded that new U.S. military aid be agreed upon before any new diplomatic or strategic arrangement was negotiated with the American or through the Pan-American Union.[16] Although maintaining its position of neutrality, even after the attack on Pearl Harbor and the entry of the United States into the war, the Argentine government was confident that it could obtain the necessary weaponry for its armed forces through some Lend-Lease arrangement or by direct purchase. But when negotiations failed in July 1942, the Argentine government had to seek another source of supply. There were talks with the German Chargé d'Affaires about the possibility of shipping weapons through the blockade or by Argentine ships visiting neutral European ports, such as Spain or Sweden. An official request was made to the German embassy on August 24, two days after Brazil's entry into the war. The request was for submarines, airplanes, anti-aircraft guns, tanks and ammunition, and it seemed that a triangulation agreement could be reached, with the weapons coming from Spanish depots, which would then be resupplied by the Germans. The German government, however, acted with caution, finally concluding that the war needs did not allow it to arrange the sale of arms, but without prejudice to maintain the negotiations alive and lengthen them in time.

There was a military coup in Argentina in June 1943, with the installation of a new military government, which did not openly express hostility to the United States and its policies in the region. The United States insisted, however, that until there was a break in the relations with the Axis, any talk of armaments with Argentina would be futile. The breaking off of relations between Argentina and Germany and Japan took place only in January 1944, using as a pretext the revelation of an extensive German espionage network in Argentine territory. However, this led to a new military coup in Argentina, with General Edelmiro Farrell taking over as president, with a stronger orientation towards the Axis, and the United States continued with its diplomatic pressure, even withdrawing its ambassador, delaying the acceptance of the new government for several months. Britain did not support the measures adopted by the Americans, as it considered of utmost importance to maintain the economic link through the Argentine export of raw materials. Argentina has seen itself as the leader of South America for many years, but the war brought new and sophisticated weaponry to its rival,

16 Leonard, *ibid*., p.194.

Brazil, while Argentina received absolutely nothing. Indeed, general Juan Perón came to power by claiming that he could redress this change in military status.[17]

6 First tank manufactured in South America: the "Nahuel"

By the end of 1943, the Argentine military government established the Mechanized Troops School, with its newly built barracks in Villa Martelli, province of Buenos Aires. It gathered the scarce armored vehicles available, in addition to some trucks and light motor vehicles. During the World War Two, the Argentine Army studied the possibility of manufacturing heavy armament within the country, since it was difficult to acquire it abroad due to the neutral attitude that Argentina had adopted during the World War Two. The Argentine Republic was excluded from the aid that the United States of America gave to the allied countries and to those that had at least broken off relations with the Axis (Germany, Italy and Japan).

In view of this situation of not being able to find armored vehicles in the market, Argentina was inclined to produce its own tank, which led to the building of the Nahuel DL-43, a medium tank armed with a 75 mm gun, clearly inspired by the early M4 Sherman, although it incorporated improvements in design and armor. It was a hasty project, thanks to the initiative and dynamic action of Lieutenant Colonel Alfredo Biasi, military engineer, who managed to overcome the limitations of a country with very little technical experience, but managed to manufacture it in a few months in the aged facilities of the Esteban de Luca Arsenal, in the neighborhood of Constitución, in the city of Buenos Aires.

This tank had a mass of about 30 tons, a Krupp model 1909 75mm caliber cannon in a rotating turret, with a coaxial machine gun. Its engine, which required a major adaptation effort, was of the old Dewoitine aircraft, of French origin, from Lorraine Dietrich, of 12 cylinders in double V and of about 500 horsepower. The engines were loaned by the *Fábrica Militar de Aviones*, in the province of Córdoba. In 1944, the first tank left the factory, but only twelve units were completed before production was ceased in 1945. All twelve vehicles produced were supplied to the Mechanized Troops School and a medium tank company was organized there, of which the then 1st lieutenant of artillery Javier de la Cuesta Avila became commander. Under the command of 1st Lieutenant Carlos Enrique Warnholtz, the Vickers Lloyd formed the light tank company.

Following the end of World War Two, there was a huge surplus of tanks,

17 Leonard, *ob.cit*., p.11.

which were sold at low prices. In addition, the needs of the European countries meant that they were delighted to accept Argentine grain as a form of payment. Therefore, the Nahuel DL-43 was abandoned, discarded and replaced a few years later by lots of second hand Sherman tanks. Despite being an important and politically influential achievement at the time, it can be considered a model under experimentation which was not maintained when the armored material acquired in Europe began to arrive in mid-1947.[18]

7 Brazilian threat and the diplomatic dispute with the United States

During the years prior to the World War Two, the relationship between Argentina and Brazil was hardening, with Brazil's suspicions that an Argentine military attempt might be made on its southern region of that country. Certainly the Argentine road system attracted the attention of the Brazilian Army General Staff which, in a comprehensive study of Argentina's industrial and military capabilities noted:

> "Argentina possessed at that time the best and the densest road network in South America, with a total length of 410,000 kilometers. This system's development was due to the Highway Law, passed in 1932 under the presidency of General Justo, as a result of the influence and guidance of the Army General Staff, especially with respect to roads leading to the frontiers, which were of a strategic nature".[19]

Brazilian perceptions of the Argentine challenge had become progressively sombre in recent years; indeed, diplomatic friction in 1937 had led to an emergency defense measures against possible sudden aggression by Argentina and during a visit to Buenos Aires the following year [General Pedro de Góes] Monteiro apparently obtained concrete information on an Argentine plan for invasion of Brazil. General Staff analysts, in a report drafted in September 1939, expectedly gave primary emphasis to the perceived Argentine threat, which explained why they devoted themselves that year to preparing operational plans for the defense of the three southern states of the Mato Grosso.[20] In negotiations with US authorities, Monteiro made no secret of Brazil's strategic priorities. In mid-1939 he spoke *with vehemence* to [US Chief of Staff George] Marshall and his staff about Brazilian views of the Argentine challenge. In case of a new

18 Picciuolo, *ob.cit*., p.58.

19 Rauch, *ob.cit*., pp.216-7.

20 Hilton, Stanley E., *The United States and Argentina in Brazil's Wartime Foreign Policy, 1939-1945*, in Guido di Tella & D. Cameron Watt (editors); *Argentina between the Great Powers, 1939–46*, Chapter 8, p.161.

world war, he explained, Brazil could participate on the side of the USA only if it were sufficiently strong to deter Argentina simultaneously. In conversation with Roosevelt he made the same point and on his return home he wrote to Marshall in order to leave no doubt: the 'center of gravity' of Brazilian forces was the far south. Later, in discussions with the US Military Mission in Brazil, the divergent strategic requirements became a recurring source of friction. The benefits Brazil gained from its collaboration with the United States were enormous. In the military field, it was able to re-equip its entire armed forces.

The Inter-American Conference on Problems of War and Peace was held in Mexico City from February 21 to March 8, 1945, at the Chapultepec Palace. Regarding Argentina, the delegates agreed that if Argentina signed the Act of Chapultepec, declared war on the Axis and gave evidence that it would restrict Axis activities, all the American republics would resume relations with the country. On its part, the Americans were ready to use their influence to obtain the admission of Argentina to the inauguration of the United Nations Organization in San Francisco. On March 27, 1945, by decree N° 6.945, the Argentine government declared war on Germany and Japan, and on April 9. The United States resumed diplomatic relations with Argentina. Consequently, the immediate concern of the Argentine Armed Forces was to acquire the last word in military equipment to replace the outdated pre-World War Two material: aircraft for the Air Force; ships and planes for the Navy; anti-aircraft guns, tanks, artillery and all that was necessary for the mechanized and motorized equipment of the Army.

However, there was also another equally important concern, a far-reaching project: the development of a national arms industry. As a result of the recent World War, Argentina's dependence on arms imports had been proven once again, which made it vulnerable to the decisions made by other countries. The military planners wanted to reduce this vulnerable position by building factories to produce heavy weapons and developing an iron and steel industry. In attempting to acquire military equipment, the government of General Juan Perón continued to face the arms embargo imposed by the United States during the war. The embargo was intended to ensure that Argentina complied with the Chapultepec agreements. This measure applied not only to arms sales or transactions from the United States, but also - by means of a gentlemen's agreement with the respective governments - to arms produced in Great Britain and Canada. Even the United States pressured neutral Sweden not to deliver weapons that had been contracted years before.[21]

21 Potash, Robert A., *El Ejército y la política en la Argentina. 1945-1962. De Perón a Frondizi*, p.115

8 Argentine Army incorporates the Sherman tank

By the end of 1946, and as a result of the last minute diplomatic alignment with the victorious powers, the Argentine Army began to take steps to purchase armored tanks and also motorized vehicles (Jeeps and various types of trucks) which, as war surplus, were in the vicinity of the city of Brussels, Belgium. These vehicles had been acquired by private Belgian businessmen for subsequent sale. Purchase management was led by the then Minister of War, General Humberto Sosa Molina, and supported by President Perón, with the intervention of the Argentine Institute for the Promotion of Exchange, which monopolized the control of all export and import of goods, for the acquisition and shipment (in ships of the State Merchant Fleet).

Some of the armored and motorized vehicles that arrived in Buenos Aires included the M4 Sherman medium tanks, with 75 and 76.2mm guns and several different engines. British Crusader light tank chassis (to which a casemate with a 75 mm Krupp gun was made at the Esteban de Luca Arsenal) were assigned to mechanized scout detachments. For armored artillery, the Crusaders were fitted with a 105mm Schneider (1928 model) howitzer. British and Canadian T-16 Carriers (known as Bren Carriers) were provided to the reconnaissance detachment squadrons, along with Willys Jeeps, to form the three sections of each reconnaissance sub-unit. The half-track vehicles were assigned to the armored riflemen. Other half-track vehicles were fitted with a 75mm Krupp gun (1909 model) for the mechanized scout detachments, which were called *assault guns*. There was a squadron of them at the Mechanized Troops School and a section in each of the mechanized reconnaissance detachments of the large units (First Armoured Division, First Motorized Division, Cavalry Corps Command, Fifth Army Division and Patagonia Motorized Group). The armored vehicle material, to which wheeled vehicles were added (Chevrolet and Ford jeeps and trucks, GMC and Studebaker 2 ½ ton trucks), had to be overhauled and inspected by the workshops of the Esteban de Luca Arsenal and *Agrupación Talleres de Mantenimiento General Paz* (Villa Martelli), and then delivered to the units.

The end of the World War Two marked an important stage in the Army's institutional evolution. First of all, it was a period of great expansion in its organization and availability of personnel, as the total number of troops reached more than 145,000 men. With the arrival of material purchased in Europe as war surplus, the Cavalry, in particular, had the opportunity to access modern equipment which had only been known about in the press reports of the recent war. By 1948, the 8th Line Cavalry Regiment was transformed into a Tank Regiment,

as it received the first 75mm Sherman tanks to be brought into the country, thus becoming the first armored unit of the Argentine cavalry. After several moves, the Regiment was relocated to its present location in Magdalena, Province of Buenos Aires, about 150 kilometers from the city of Buenos Aires.

9 The Need for a Doctrine

The Mechanized Troops School (later the Armoured Troops School), and the 1st Armoured Division constituted a real school of learning for cadres and soldiers of the new specialty, common to all arms. A distinguished artilleryman and staff officer, Lieutenant General Benjamin Rattenbach was appointed in the 1940s as Inspector General of the Armed Forces. He had been appointed Inspector General of Mechanized Troops in the 1940s, and from there he promoted the organization, training and completion of tank, armored rifle, artillery, engineer and communications units.

The Lieutenant Colonel Héctor María Torres Queirel, was one of the first officers of the Argentine Army to attend the Armoured Forces School course at Fort Knox, of the United States Army, who published a book in May 1947 with his experiences and learning of the doctrine and regulations at that military academy.[22] In the preface to his book, Torres Queirel states:

> I have wished to dedicate this book especially to cavalry officers, because I understand that in many respects there is a great deal of similarity between cavalry and armored forces, and also because there is often some confusion in the ideas that nourish the spirit of the weapon. With regard to the latter, there is, for example, the widespread belief that the engine is the enemy of the horse; that the horse, in turn, cannot be replaced by the vehicle; that in our theatres of operations the tank does not have a favorable field for the development of its action and, like these, so many other ideas, which only lead to establishing a divorce that in reality does not exist. [23]

Another of the forerunners of armored cavalry was First Lieutenant Carlos Augusto Landaburu, who years later gave prestige to the *Escuela Superior de Guerra* as a professor of the Armoured Cavalry Conduct course. It was there that he poured his experience, gained not only in the troops, but also in the course at Fort Knox (Armoured School of the US Army), as well as in his in-depth and detailed studies on the origin and participation of armored vehicles in

22 Torres Queirel, H.M., *Las Fuerzas Blindadas*; Círculo Militar – Biblioteca del Oficial, Volume 344, Buenos Aires, May 1947.

23 Torres Queirel, *ibid*., p.10.

the World War Two. He is credited with drafting important regulations for the conduct of armored troops.

At the time, with an incipient organization and in the absence of an important body of doctrine on a tactical level and strategic operational use, the new regulations for armored troops were being drafted at the Mechanized Troops School, then a specialty within the Army, as they were not considered to belong exclusively to the Cavalry. Under the influence of the doctrine of the United States Army, the issues related to the conduct of the armored division were published in a Regulation, from which were derived those corresponding to the tank battalion, armored riflemen and mechanized scout detachment levels. Technical manuals for each of the armored vehicles and maintenance directives for the unit and sub-unit levels were written. The Mechanized Troops School had a short life span, as it was disbanded in 1953, but it provided the Army and Cavalry with the training of specialists in armored conduct, from unit commanders of all weapons to sub-unit commanders and officers graduating from the Military College or recently incorporated into the specialty.

10 US Military Assistance Plan

As a signatory of the Organization of American States (OAS) in 1958, Argentina was also a member of the Inter-American Defense Board, a regional organization based in Washington of great importance on the international scene at the time. The Cold War meant that the strategic consequences of the global order took priority over those of the regional order, which had been the most important up to that moment. In April 1958, the presidential approval of the *Military Plan for the Defense of the American Continent* was announced, and the main requirement was to prepare *for a comprehensive confrontation with communism*. However, the hypothesis of regional conflicts, in which the trigger was usually the ideological issue, was not neglected.

The process of studying a new military design continued in 1959 with the creation of an advisory commission for the restructuring and modernization of the units of that armed force, which later introduced some variants. Even though doctrinal progress was made in foreseeing the adoption of armored vehicles in the operational and tactical field, in fact, the Cavalry remained mostly mounted on horseback and reluctant to accept modern means of combat. It was necessary, in 1962, a written order from the Undersecretary of War, General Carlos A. Caro, with a *summons to the senior staff* of the cavalry to *take full charge of the armored units within two years and relieve all the senior staff of the oth-*

er arms.[24] On 6 February 1963, General Pascual Pistarini, Commander of the Cavalry Corps, gave a ceremonial farewell to its members, encouraging them to assume the change, maintaining the existing traditions of the cavalry. In one paragraph of his allocution, Pistarini said:

> Never lose the bold spirit of the horseman, whatever your destiny, because in the gratitude to our faithful friend, as in the constant and inflexible exercise of the ethical values of the Cavalry, you will find the necessary inspiration to die with honor at the vanguard of the Squadrons or between the irons of your tanks. [25]

Under the presidency of Arturo Frondizi (1958-1962), an agreement was reached with the USA or PAM (*Plan de Ayuda Militar* – Military Assistance Plan) which provided, at the very least, for the acquisition of weapons and equipment (armor) for a tank battalion and three artillery groups. At first, M-113 combat vehicles were procured for the armored riflemen, with the 10th Cavalry Regiment being one of the first to receive them in 1964. Five M-41 tanks also arrived on loan and remained at the Cavalry School until 1969. Under Pentagon pressure, the Military Assistance Plan (MAP) was signed in 1964, tying the Armed Forces to US supply and control. The MAP was announced in 1965 by President Arturo Illia in his congressional speech, for who "the conclusion of a reciprocal aid agreement with the United States of America", which had allowed "the procurement of valuable equipment for the armed forces", was intended to complement "the equipment of the armed forces by means of a coherent and rational procurement plan, jointly assessing the needs of the three forces". He said they would have "the indispensable material" for their "training and education", and promised to strengthen "the indispensable security of the country's defense". [26] His message to Congress sought to convey and emphasize his commitment to the MAP, by indicating that the requirements of the Armed Forces would be channeled through the preferential relationship with the United States.

The beginning of 1962 saw a sharp increase in the political unrest that had been raging since the inauguration of Frondizi's presidency in 1958. Consequently, as a result of these divisions, the military sector of the society was at the center of the so-called "Blues and Reds Crisis" of 1962 and 1963. A fissure developed between the armed forces and even within the different arms. The

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24 Comisión del Arma de Caballería San Jorge, *Historia de la Caballería Argentina; Volume III: Siglo XX (1900-1970)*, p.137.

25 Comisión del Arma de Caballería San Jorge, *ibid*., p.142

26 Fraga, Rosendo M., *La Política de Defensa Argentina a través de los Mensajes Presidenciales al Congreso – 1854-2001*, p.663.

Azules (the cavalry in general, part of the artillery and the Air Force) were in favor of an early call for elections (a legalist stance), while the *Colorados* (the rest of the army and the navy) wanted to lead the political process. The clashes that ensued resulted in the end of Frondizi's presidency, with Dr. José María Guido taking his place.

As a result of the end of the crisis within the Army, General Juan Carlos Onganía was appointed as the new Commander-in-Chief of the Army, which led to the introduction of changes that would logically affect the cavalry, in order to find a definitive solution by setting up a Special Commission for the Restructuring of the Army to study and determine the Army's organic structure. The aim was to transform the Argentine Army from an essentially territorial organization and deployment into an operational force with greater mobility. Its ultimate purpose was to have a force of ten brigades, two armored brigades and eight infantry brigades, organized into four Army Corps. That meant the disappearance of the army and cavalry corps organizations, which now had no place in the new structure. This was implemented with the Army Organization Order of 1963, which included the dissolution of the Cavalry Corps in February of that year, thus setting up a modern operational structure, which lasted from 1964 to 1973.

This restructuring of the Cavalry continued with the process of preparing for the arrival of armored material, beginning with the First Armoured Cavalry Brigade, including specialization and instruction trips for officers in the USA, and the task of updating and preparing the driving regulations and procedures and other technical manuals for the vehicles that were being incorporated into the units. However, the weakening of the government and the figure of President Arturo Illia ended with the seizure of power by the so-called Argentine Revolution on 27 and 28 June 1966. Though the Cavalry throughout the country remained apart from the military actions, almost all its generals, both active and retired at the time, had some degree of participation in the revolutionary preparations. The Blues, led by General Juan Carlos Onganía, seized political power in Argentina. Argentina's Military Assistance Plan (MAP), the result of the relationship with the US, was suspended as a result of the coup d'état and the inauguration of a new military government. This led to a radical change in the source of supply of war material, which had been the United States since the end of World War Two, and Europe was once again considered as the country's supplier of war material.

11 Plan Europa

By the 1960s, the Argentine Army contemplated the need to replace the bulk of its armored force composed of M4 Sherman and Sherman Firefly. For this purpose, it implemented the *Plan Europa* (Plan Europe), which sought to diversify armament suppliers and find a technological partner to begin the development of the national defense industry. On January 1967, Brigadier General Eduardo Juan Uriburu took over as Deputy Chief of Logistics of the Army General Staff. He was a cavalry officer who had been trained in logistics for many years. During the late 1950s, he had chaired the Armaments Acquisition Commission in the United States while serving as a military attaché in Washington D.C. Then in 1963, he was head of the CERE Logistics Group and took a course in National Security Economics at the Industrial College, Fort McNair (Washington). Uriburu had very clear ideas about military supply and was very critical of the MAP, which "prevented an independent attitude of national defense". During his inaugural discourse, he stated that the Argentine Army should be self-satisfied and purchase from whomever it bought from. This was the beginning of the so-called *Plan Europa*.[27]

Plan Europa was one of the greatest military procurement logistical experiences of the twentieth century, with largely positive results in terms of the planning and execution of a process of modernization of the army, of which the cavalry was a notable promoter.[28] Accordingly, a new commission was set up in the General Staff of the Army, under General Uriburu, to carry forward the modernization of the Army and, as a result, the acquisition of new war material, through the work of various sub-commissions, which would be responsible for analyzing and evaluating various types of tanks, scout vehicles, motorized transport vehicles, vehicles for engineers, etc., with a first objective in mind, which was the possibility of national co-manufacturing and technology transfer.

Since 1967, numerous journeys were made to Europe to visit more than thirty factories, military and civilian research centers, barracks and demonstration camps in the main countries of that continent, forming opinions and criteria for the acceptability and suitability of the material to be acquired. On October 24, 1967, it was decided to purchase for the Cavalry, 60 battle tanks, 107 ½ ton transport vehicles, 68 recoilless guns, 50 anti-tank guided missiles and 23 light mortars. The Army considered that the AMX-13 and its armored family would allow it to unify the logistics chain and reduce operational costs. Furthermore, in France, Argentina could have such a technological partner to enable the devel-

27 Mazzei, Daniel, *Bajo el poder de la Caballería – El Ejército Argentino (1962-1974),* p.214.

28 Comisión del Arma de Caballería San Jorge, *ob.cit*., Vol. III, p.148.

opment of Argentina's embryonic armor industry. Under the contract, vehicles would be assembled in Argentina from French-supplied components, as a stepping stone to a possible series of vehicles entirely produced in the country. The Argentine purchase included 80 AMX-13s with 105 mm guns, 180 AMX VCI armored personnel carriers, 14 AMX-155 F3 self-propelled guns and 2 AMX-13 PDP (Poseur De Pont) Modèle 51. Panhard AML-245H90 armored vehicles, armed with 90 mm guns, were also purchased from France. Additionally, 60 Mowag Grenadier personnel carriers were purchased in Switzerland. Also, in order to promote the development of local industry, 60 Mowag Roland mortar carriers and 40 AMX-13s were assembled in Argentina.

The second experience in tank construction was thus formed, with the licensed production of the entire family of AMX-13 armored vehicles. Creusot Loire, a French firm, was contracted to supply 120 chassis of the AMX-13 in different variants, half of which were to be manufactured in Argentina. These were to be built by the ASTARSA shipyard, located in the town of Tigre, in the Province of Buenos Aires. However, the AMX-13s did not meet expectations and needs, so the General Staff of the Argentine Army requested a new pre-selection and competition to define the new medium tank, specifically designed to equip all Argentine armored units for the 1980s.

12 The TAM Project

It was in 1973 that President Juan Perón entrusted the Chief of the Army with the feasibility of building an Argentine tank, and two evaluation commissions were set up, which left for Europe the following year. One of these evaluated the AMX-30, which would be the logical continuation of the French technology initiated with the AMX-13 series, but surprisingly the company Thyssen Henschel, from Federal Germany, was approached and proposed the Marder chassis as the basis for the joint development of a tank. Three specific conditions for the design of the TAM (*Tanque Argentino Mediano* - Argentine Medium Tank) family of vehicles were developed on the basis of three specific requirements: firepower, mobility and protection, taking into account the orographic conditions of the terrain over which it would eventually have to move and the constraints imposed by the different means of transport (truck or rail), ports and waterways suitable for shipment and river transport, which should not weigh more than 30 tons.

After a four-year process, which concluded in March 1977, two prototypes were delivered for evaluation: a TAM A Prototype and a VCTP (Personnel Car-

rier Combat Vehicle) A Prototype, publicly presented during the traditional Independence Day parade on July 9, 1977. The prototype TAM was delivered to the Army on December 26, 1977 for a two-year evaluation, during which it was subjected to an intensive program of operational tests, covering more than 5,000 kilometers. Trials were conducted over a variety of terrains and temperatures, ranging from the central plains and the Patagonian Desert, as well as in tropical jungles and rugged terrain at 4,500 meters above sea level. A VCTP prototype was also received from Federal Germany and underwent a series of demanding tests. The experience gained during the tests led to the need for almost 1,500 modifications to the basic design.

Even though the contract with Thyssen-Henschel only covered design engineering and quality control, the agreement was extended to include series production of the TAM family, given the technical capability demonstrated by the Argentinians. On December 1979, personnel, materials and technical documentation were transferred from the Armed Forces Technological Research Centre (*Centro de Investigaciones Tecnológicas de las Fuerzas Armadas - CITEFA*) to the Boulogne Plant, where TAMSE (*Tanque Argentino Mediano Sociedad del Estado*) was to be established, starting with the assembly of the components supplied by the Germans, to move on to the production line and quality control line, thus adjusting the integration process of the locally manufactured components.

In early 1980 the first serial unit (TAM 02) was delivered, being the first one built in Argentina, albeit with a German chassis, while the second one to leave the assembly line (TAM 03) was built with components produced entirely in the country. Production progressed rapidly, and was gradually integrated with parts that began to be produced in the country, some of them in the private sector and most of them in the *various Fabricaciones Militares* plants. During 1980, the material of the 8th Armoured Cavalry Regiment began to be modernized with the arrival of the TAM family of combat vehicles. TAM family had the following variants: the Argentine Medium Tank (TAM); the personnel carrier combat vehicle (VCTP); the mortar carrier combat vehicle (VCTM); the command post combat vehicle (VCPC); the tank recovery combat vehicle (VCRT); the 155 mm artillery combat vehicle (VCA); and the rocket launcher combat vehicle (VCLC). Over a hundred units of the different models of the TAM family had been produced by 1982, thus securing the armored material that would eventually replace the repowered M-4 Sherman in the Argentine Army. On several occasions there were countries interested in acquiring TAM vehicles, but a lack of a clear sales policy and the well-known networks of conflicting interests pre-

vented a proper commercialization. Designed on the basis of the requirements of the Argentine Army, the TAM did not meet all the requirements of foreign customers in comparison with other models. Despite being a very modern medium tank with a higher growth potential than other similar tanks in the world, it did not achieve sales.

13 The Beagle Channel Dispute with Chile - Purchases 1977/78

Beginning in 1970, the Argentine Army phased out all Sherman M-4s with 75mm guns, leaving only 140 Fireflys in service. A temporary solution until the re-equipment with TAMs could take place and in the midst of a complicated regional scenario with border tensions, an up-grade of the Shermans of the Second Armoured Cavalry Brigade (Tank Regiment 1 in Villaguay, Entre Ríos; and the Armoured Rifle Cavalry Regiments 6 in Concordia, and 7 in Chajarí) was undertaken. The first of the repowered Sherman was delivered to the 1st Tank Cavalry Regiment at the end of January 1978. Few months later, in November/December of that year, as a consequence of the escalation of the territorial dispute between Argentina and Chile over the Beagle Channel Islands, a general mobilization of the Army took place, which forced, among other actions, the displacement of almost all the Cavalry units to probable theatres of operations. Consequently, with the mobilization of forces towards the Chilean border, the units of the First and Second Armoured Brigades were ordered to be deployed to positions along Patagonia. The First Brigade was concentrated in the province of Neuquén, while the Second Brigade was concentrated in the provinces of Chubut and Santa Cruz.

On October 4, 1978, the First Tank Cavalry Regiment moved from its barracks to the port of Santa Fe, where they were embarked together with the Second Armored Artillery Group on board the ELMA[29] Río Teuco merchant cargo ship bound for Punta Quilla, Santa Cruz province. The A Tank Squadron of the 6th Armoured Rifle Regiment, formed in August 1978, deployed to Puerto Santa Cruz, while the units of the 7th Armored Rifle Regiment moved to Bahía Blanca and Comodoro Rivadavia as a reserve of the Army General Staff. Final preparation in late October 1978 included major ammunition exercises at Comandante Luis Piedrabuena, with the participation of Sherman tanks from units deployed to the south, awaiting orders to advance towards the Chilean border. To the north, the 18th Armored Exploration Detachment in Esquel, Chubut province,

29 ELMA: *Empresa Líneas Marítimas Argentinas* [National State owned merchant fleet]

had been re-equipped with two platoons of repowered Sherman tanks, which were mobilized to positions in Villa La Angostura, Neuquén province.

After both countries accepted the mediation of Pope John Paul II, which put an end to the mobilization situation, the withdrawal of the Armored Brigades' assets began in January 1979. During this period, one of the most important developments was the creation, on January 21 1978, of the 4th Airborne Cavalry Squadron, within the 4th Airborne Infantry Brigade.[30] This gave birth to a new specialty in the Argentine Army Cavalry, with the mission of carrying out reconnaissance, providing security, and eventually participating in operations as a force savings unit. Following the movements and logistical efforts to which the armored material was subjected in 1978, the limitations of the Shermans became evident. Even with a 105mm cannon and a diesel engine, the Shermans showed certain limitations, as did the Carrier T16s and the semi-tracked vehicles. Between 1977 and 1978, the Argentine Army purchased sixty Panhard AML-90 scout vehicles from France to equip the Armored Cavalry Reconnaissance Squadrons throughout the country.

Following the experiences of the 1978 mobilization, and the need for a more versatile vehicle for Patagonia, in 1981, the 9th Tank Regiment was recreated in Puerto Deseado, Santa Cruz Province, and provided with the Austrian SK-105 Kürassier A1/A2 light tank. Designed in 1967 by the Austrian factory Steyr, the SK-105 Kürassier was designed as a tank destroyer, with the aim of providing it with good mobility and flexibility even in mountainous terrain, fast and powerful, well-armed, with a 105mm gun, and which achieved a certain export success, entering service in several countries, with Argentina as the main user. The SK-105 tanks were originally destined for Chile, but the Argentine government ensured that they were supplied to the Argentine Army, leaving Chile empty-handed in a successful maneuver to increase the defensive capacity of its own force at the cost of weakening the strength of its potential opponent. In addition to the tanks also came the engineer recovery variant, the SB-20 Greif, which instead of the gun turret is fitted with a hydraulic crane, winch and excavator shovel on the chassis, and is capable of dragging damaged vehicles on the battlefield, making it possible to remove and change engines in the field and prepare firing positions.

30 In 1964, the Command of the Fourth Airborne Infantry Brigade was created, changing its name to the Fourth Airborne Brigade in 1992, and the Fourth Parachute Brigade in 1999. Finally, in 2003, it became the Rapid Deployment Force (RDF).

14 The Argentine Cavalry in the Malvinas War

For the South Atlantic conflict, or Falklands/Malvinas War, fought between Argentina and Great Britain between April and June 1982, the cavalry weapon was not absent. Its presence on the islands, however, was not massive, but was limited to two fractions of wheeled armored vehicles, created on the basis of an independent sub-unit of the Arm with all its personnel, and two smaller fractions. Its deployment to the Malvinas Islands took place through the participation of the Armoured Cavalry Reconnaissance Squadron 10 *Coronel Isidoro Suárez*, based in La Tablada, province of Buenos Aires, as an independent subunit, with two Panhard and all its personnel; Armoured Cavalry Reconnaissance Detachment 181, based in Esquel, Chubut province, with two Panhard Sections, with a total of eight Panhard and their respective crews; and Armoured Cavalry Reconnaissance Squadron 9, based in Río Mayo, Chubut province, with two Panhard and their crews.

Also joining the troops on the islands were troops from the *General San Martín* Horse Grenadier Regiment, the Tank Regiment 8 *Cazadores General Necochea*, and units belonging to the First and Second Armoured Cavalry Brigades, as well as cavalry officers and NCOs assigned to commands and elements of command troops and services for combat support. This meant that, in terms of armored material, only twelve Panhard vehicles participated, which arrived by air by C-130 Hercules and were deployed in the vicinity of Puerto Argentino/Stanley, together with the personnel of the sub-units that, by decision of the Command of the Puerto Argentino Army Grouping, had their original organizations affected, to give room for the existence of two elements that operated as a reserve position.

An important conditioning factor for this was the features of the area of operations, especially the lack of roads and the characteristics of the terrain, which were far from being appropriate for the use of armored cavalry vehicles. About the difficulties experienced on the terrain of the Malvinas/Falkland Islands, Colonel Gustavo Adolfo Tamaño recalls:

> *In an attempt to climb the Wireless Ridge on a path, one of our vehicles got stuck halfway up. Although it was a rock ridge, it had sections of soft ground. We managed to get out of its mud trap with the help of a 4x4 tractor. To avoid falling further into these traps, which could end up ruining the clutch in rescue efforts, we decided to stay on firm roads and track trails. This forced us to consider tactics and employment formations that took into account these limitations.* [31]

31 Tamaño, Gustavo, *El sabor de la derrota – De los Andes a las Malvinas*, p.105.

There were several reasons for choosing the Kürassier over the Panhard. The small Austrian tank was designed for defensive mountain operations and had less ground pressure, in addition to its night fighting capability, lower fuel consumption capacity, and greater firepower.

As Armoured Reserve, the Panhard vehicles carried out various reconnaissance, security and fire support missions for the 3rd and 6th Mechanized Infantry Regiments, deploying two groups of two vehicles on the southern coast of Puerto Argentino/Stanley. For their part, the personnel of 10 Armoured Cavalry Reconnaissance Squadron (except the crews of the vehicles), formed first the Heliborne Reserve, then the Motorized Reserve, and finally the Foot Reserve, taking part in the final battles, suffering deaths and casualties in action. Eventually, on June 14, 1982 as an Armoured Reserve, it was committed to the west of the defensive position to deploy and open fire on British infantry advancing from the Moody Valley, west of Puerto Argentino/Stanley. Its guns opened fire on these troops and then had to withdraw under heavy British artillery fire.

Since Argentina was debating on two fronts, it was on the Chilean border that the best armored units of the Argentine Army were concentrated. In the Argentine mainland, Armoured Cavalry Brigade 1, composed of Armoured Cavalry Regiments 2, 8 and 10, was mobilized by rail from the province of Neuquén, in northern Patagonia, to Santa Cruz, in the far south of the country, to intervene in the event that Chile attempted military action on Argentine territory while the islands were being fought over. These units were integrated into the Southern Theatre of Operations *(Teatro de Operaciones Sur* - TOS), under the control of the Commander of the 5th Army Corps. Thankfully, no incident occurred, with Chile maintaining a passive attitude beyond the massive mobilization of troops and armored vehicles towards the southern region of that country, thus keeping Argentine units on their toes. When the operations in the Malvinas/Falklands ended, the armored regiments returned to their usual peacetime units.

15 Local modernization of armored materiel - Entering the twenty first century

There was a need to upgrade the operational capability of the TAM in order to find a solution to the aging and technological lag of the material, with the aim of extending the service life of the tanks and increasing their capabilities. In 2010, the TAM 2C project was born with the signing of a memorandum of understanding between the Argentine and Israeli Ministries of Defense, aimed at industrial and technological cooperation in defense. The memorandum, which was the basis for the subsequent agreement for the modernization of the TAM to its TAM 2C version, involved the development and evaluation of a prototype

and the subsequent series production of TAM combat vehicles with Army personnel. An extensive modernization project was programmed, and a dedicated project team was appointed, whose first phase of preparatory work on feasibility studies took nine months, culminating in the contracting of the Israeli company Elbit System Ltd. This project specified the modernization of five tanks with Israeli assistance, while another five were to be modified by a mixed team of Argentine Army personnel. Ultimately, Argentine personnel would be in charge of modernizing a batch of seventy-four TAMs.

During 2011, the Argentine Army's General Directorate of Research and Development (DIGID) began modernization work at the 602nd Arsenals Battalion facilities in Boulogne. Key issues to be considered were to increase the chances of survival and the capability to respond to threats, as well as the possibility of fighting both during the day and at night. It was also sought to improve the level of crew protection; optimize static and moving firing accuracy; prioritize the digitalization of control and firing systems; and eliminate the old hydraulic systems for turret movement. A new electronic turret movement system and a new digital control and firing execution system were among the main necessary upgrades. The prototype was finally completed, tested and approved in 2014, and a new agreement was signed for the modernization of seventy-four TAM combat vehicles to the TAM 2C version. The TAM 2C project involves military engineer officers working together with staff officers, mechanical NCOs, volunteer soldiers and civilian personnel of the Argentine Army. Following the trial of the prototype in 2013, a contract was formulated and signed in 2015 with the objective of modernizing 74 units, with the option to modernize an additional thirty-four units, for a total of 108 units.

By the end of 2020, the TAM 2C Modernization Program gained new impetus. The advance payment was finalized, the contract was renegotiated, upgrading the sub-systems provided by Elbit Systems Land to the latest available technology, and the execution of the contract formally commenced. Work began simultaneously on fitting out the facilities at the 602nd Arsenals Battalion (Boulogne Sur Mer, Buenos Aires province), where the integration of the subsystems would take place. In 2021, the company Elbit Systems Land began work on the engineering of the new prototype, incorporating the technological advances, giving birth to the TAM 2C A2 version. In the following year, the Argentine Army signed a series of agreements with the national company IMPSA, located in the province of Mendoza. Under the Program, IMPSA was chosen as the main contractor for the machining of the turret and the manufacture of supports and baskets, as well as being involved in the complete overhaul and moderniza-

tion of the tank's tank pan, together with other companies. The work included support and tensioning wheels, shock absorbers, fuel tanks and track links. The modernization of the Argentine Army's main armored weapon, the TAM 2C version adds state-of-the-art systems that enable all-weather combat and greater precision in gunfire, thanks to the incorporation of an advanced digitized fire control system. Furthermore, among other improvements, a higher turret movement speed was achieved, as a result of replacing the original hydraulic movement system with an electric one. The corresponding firing tests and adjustments were successfully carried out in May 2023. The first phase of the project is expected to modernize seventy-four of these units with this system.

A significant technological leap forward has been achieved, since the technology used in the TAM 2C is the same as the one currently used by the most modern tanks in the world, which provides it with the necessary operational capabilities required in modern conflicts, while fostering the development of the national industry. Additionally, the Argentine Army began the modernization of the SK-105 tank fighter to A2 standard, by its own technicians, which would be complemented with the A3, consisting of reinforced armor and a 105mm M68 gun. The aim of the technological upgrade of the SK-105 Kürassier consisted in increasing its firepower, enabling its all-weather operation, the implementation of locally developed technologies at an acceptable cost, so as to extend the service lifetime of these vehicles. The work on the Kürassier chassis is being carried out at the Arsenals Battalion of Comodoro Rivadavia, Province of Chubut, where the turrets of the decommissioned AMX-13s are being installed, giving birth to a new national hybrid model, the *Patagón* tank.

16 Conclusion

During the first half of the twentieth century, foreign influences on the military doctrine of the Argentine Cavalry started at the beginning of the century with Germany, at least until its defeat in the World War One, but continued with less intensity until the outset of the World War Two, by means of the regulations published by the Argentine Army. There was also an influence from Italy, France, Spain, Belgium, through professors at the Army War College, and then the United States, with an incipient appearance at the end of the 1950s, but with a complete consolidation from the 1960s onwards. However, the technical progress that reduced the presence of the horse, with its gradual replacement by motorized vehicles, led Argentina to adopt the military doctrine that was victorious in the World War Two, which was based on the use of armored and mechanized

vehicles, and its dissemination was completed with the translation and copying of the American regulations of the 1960s.

Approaching the end of the twentieth century, in 1998, the Law for the Restructuring of the Armed Forces was passed in order to legislate on the organizational and operational aspects of the Armed Forces, establishing among its aims the reduction of the administrative and bureaucratic structures of the forces in order to enhance the use of their resources and, simultaneously, the increase of their efficient and effective logistical support, putting these units in a position to develop sustained operations that allow actions in different fields of expertise and geographic areas. The Law also establishes criteria for decision-making on the acquisition of material resources for defense, with the Ministry of Defense being responsible for evaluating and deciding on the requirements for equipping the Armed Forces. In addition, with regard to the alternatives foreseen for analyzing equipment, it proposes: a) whether it is feasible and acceptable to recover material that is no longer in service; b) modernization of available material; and c) incorporation of new material, in which case priority should be given to equipment that enhances the deterrent capacity, encourages the standardization of existing material at the joint level, and contributes new technological developments. Therefore, the Armed Forces Restructuring Law is a step forward in the path towards the creation of a solid political leadership of Defense -initiated with the Defense Act-, the strengthening of joint military action, and the search for economy, efficiency and effectiveness in military matters, within a framework of recurrent economic difficulties that have constantly affected the Argentine Republic throughout its entire history.

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Horsemen and Modern Counter-insurgency

Ian F. W. Beckett

One of the more striking images to emerge from the 'war on terror' following the 9/11 attack on New York's World Trade Center in 2001 was that of members of US Special Forces from Operational Detachment Alpha 595 in Afghanistan in October 2001. It would not have been perhaps unusual for Special Forces to be able to call in precision airstrikes from B-52 bombers on Taliban positions in Afghanistan using satellite communications and global positioning technology, but they were doing so whilst operating on horseback. [1] The image was first publicised by US Defense Secretary, Donald Rumsfeld in November 2001, inspiring Douwe Blumberg's 'Horse Soldier Statue' unveiled at Ground Zero in November 2011. The story had also already resulted in the publication of Doug Stanton's popular account *Horse Soldiers* in 2009, which then led to the 2018 Hollywood film, *12 Strong*. Pre-mechanised horsed warfare had been married to modern technology although the reappearance of the horseman in counter-insurgency actually owed far more to the concept of mounted infantry than traditional cavalry *per se*.

Most observers would have thought cavalry far outmoded by 2001. Indeed, this had been already the generally held view by 1914 given that the development of breech-loading rifles and quick-firing artillery had added immeasurably to the power of defence. For centuries warfare had been constrained by the speed of man, the speed of the horse, and the availability of fodder. The advent of steam power and the railway began the transformation of warfare in the nineteenth century. However, the point has been made that one of 'the paradoxes of the creeping modernisation caused by railways, factories and more sophisticated weaponry, was that it led to mass armies and *less* mobility than during the pre-twentieth century times of rapid movement on threadbare logistics and living off the land'. Compared to more static warfare and 'logistically complex successive generations of weapons technology', therefore, the pre-modern period represented a highpoint of mobility on the part of armies. In turn, it also

1 Charles Briscoe, Richard Kiper, James Shroder, and Kalev Sepp, *Weapon of Choice: US Army Special Operations in Afghanistan* (Fort Leavenworth, KS: Combat Studies Institute Press, 2003), 122-29.

marked a high point for the success of irregular or guerrilla forces when co-ordinating action with regulars. [2]

In any case, throughout the late nineteenth century, cavalrymen had fought a rear-guard action in arguing for the continued efficacy of the sabre and lance: the *arme blanche*. In the case of Britain, the vigorous debate around the utility of cavalry saw the 1904 manual, *Cavalry Training*, abandoning the sabre and the lance (which was abolished other than for ceremonial use) in favour of emphasising the importance of the rifle and dismounted action. Under the influence of traditionalists, the 1907 edition restored the principle of mounted offensive action: the lance was reinstated in 1909. A new edition of the manual in 1912 then shifted the balance somewhat back towards those advocating mounted infantry as the future of the mounted arm. However, the Army Council still ruled in 1913 that mounted infantry would not be deployed in any expeditionary force sent to Europe. In effect, a kind of hybrid cavalry emerged from the 1912 manual, in which British cavalry was tactically flexible in being trained for both mounted and dismounted roles at the outbreak of war. [3]

Overall, European armies still deployed cavalry in very large numbers in 1914 with over 100 cavalry divisions taking the field that summer. [4] Seemingly old-fashioned cavalry charges took place in France and Flanders in the mobile warfare of 1914 and again in the semi-mobile warfare of 1918 whilst cavalry continued to be used extensively on the Eastern Front and in Palestine where some significant mounted actions took place in 1917-18. [5]

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2 Mark Lawrence, 'Introduction: Why a nineteenth century study?' to 'Insurgency and Counter-insurgency in the Nineteenth Century: A Global History', special issue of *Small Wars and Insurgencies* 30 (2019), 719-33, at 725.

3 From an extensive literature on the cavalry debate in the late Victorian and Edwardian army, see Edward Spiers, 'The British Cavalry, 1902-14', *Journal of the Society for Army Historical Research* 57 (1979), pp. 71-79; Gervase Phillips, 'The Obsolescence of the *Arme Blanche* and Technological Determinism in British Military History', *War and Society* 9 (2002), pp. 39-59; Stephen Badsey, *Doctrine and Reform in the British Cavalry, 1880-1918* (Aldershot: Ashgate, 2008), pp. 81-142; Spencer Jones, *From Boer War to World War: Tactical Reform of the British Army, 1902-14* (Norman, Ok: University of Oklahoma Press, 2012), 167-206; Timothy Bowman and Mark Connelly, *The Edwardian Army: Recruiting, Training, and Deploying the British Army, 1902-14* (Oxford: Oxford University Press, 2012), 98-103.

4 Gervase Phillips, '"Who Shall Say That the Days of Cavalry Are Over?" The Revival of the Mounted Arm in Europe, 1853–1914', *War in History* 18 (2011), 5-32, at 6.

5 Badsey, *Doctrine and Reform*, 239-302; idem, 'Cavalry and the Development of the Breakthrough Doctrine', in Paddy Griffith (ed.), *British Fighting Methods in the Great War* (London: Routledge, 1996), 138-74; David Kenyon, *Horsemen in No Man's Land: British Cavalry and Trench Warfare, 1914-18* (Barnsley: Pen & Sword, 2011); Jean Bou, 'Cavalry, Firepower

Mounted infantry, meanwhile, had attracted many supporters in the British army through its frequent (and invariably ad-hoc) organisation in many colonial campaigns such as the Anglo-Zulu War (1879), the Anglo-Transvaal War (1880-81), and the occupation of Egypt (1882) when regular cavalry had not been available in large numbers. Cavalry itself had had mixed fortunes. The ruthless and successful cavalry pursuit of the broken Zulu after the battle of Ulundi on 4 July 1879 contrasted with the near disaster of the charge of the 21st Lancers against Mahdist forces in the closing stages of the battle of Omdurman in the Sudan on 2 September 1898. Many of the advocates of mounted infantry such as the Canadian, George Dennison, took examples

and Sword: The Australian Light Horse and the Tactical Lessons of Cavalry Operations in Palestine, 1916-18', *Journal of Military History* 71 (2007), 99-125.

Fig. 1 Douwe Blumberg, *De oppresso liber. America's Response Monument*, to the U. S. Special Forces servicemen who fought in the early days of Operation Enduring Freedom. *De oppresso liber* is the motto of the Green Berets. CC SA 3.0 Unported license. Wikimedia Commons.

of the efficacy of mounted riflemen from the American Civil War (1861-65). [6] Routinely, American cavalrymen had used carbines and revolvers rather than the sabre. [7] A mounted infantry school was established at Aldershot in 1888 but closed in 1913. [8]

From the 1840s onwards there was also considerable public interest in Britain in irregular cavalry raised in India under the *silladar* system, in which recruits provided their own horses, weapons, and equipment. Such units were seen as altogether more effective than the *sepoy*s and mounted *sowars* of the Bengal army and the system was adopted for all cavalry within the Bengal and Madras presidency armies in 1861. Moreover, the irregulars tended to stand by the British in the Indian mutiny in 1857 when European volunteer cavalry was also raised. [9]

It was also the British practise to employ mounted local colonial volunteers in the role of irregular cavalry as in the Anglo-Zulu War. Most of the latter were white settlers but five troops of Natal Native Horse were raised from traditional tribal enemies of the Zulu, from the Basotho of the Tlokwa subdivision, and from Christian converts. Elsewhere in South Africa, Mfengu had been recruited into the Cape Mounted Rifles between 1835 and 1881 and deployed against the Xhosa on the Cape Frontier. [10]

The European mounted volunteers raised for the British campaign in Zululand included some Boers from the Transvaal, who were attached to Sir Evelyn Wood's No. 4 Column. Just two years later in 1881, the British were then faced with fighting Boer commandos in the Anglo-Transvaal War, in which improvised British mounted infantry was destroyed by Boer firepower in attempting

6 George Dennison, *Modern Cavalry: Its Organisation, Armament and Employment in War* (London: Thomas Bosworth, 1868), 10-11.

7 See Alonzo Gray, *Cavalry Tactics* (Fort Leavenworth, KS: US Cavalry Association, 1910).

8 Andrew Winrow, *The British Army Regular Mounted Infantry, 1880-1913* (Abingdon: Routledge, 2017), 226-36.

9 Douglas Peers, '"Those Noble Exemplars of the True Military Tradition": Constructions of the Indian Army in the Mid-Victorian Press', Modern Asian Studies 31 (1997), 109-42, at 140-41; Kaushik Roy, 'India', in Ian F. W. Beckett (ed.), *Citizen Soldiers and the British Empire, 1837-1902* (London: Pickering & Chatto, 2012), 101-20.

10 Tim Stapleton, '"Valuable, Gallant and Faithful Assistants": The Fingo (or Mfengu) as Colonial Military Allies during the Cape-Xhosa Wars, 1835-81', and John Laband and Paul Thompson, 'African Levies in Natal and Zululand, 1836-1906', in Stephen Miller (ed.), *Soldiers and Settlers in Africa, 1850-1918* (Leiden; Brill, 2009), 15-48, 49-84; G. Tylden, 'The Cape Mounted Riflemen, 1827-70', *Journal of the Society for Army Historical Research* 17 (1938), 227-31.

mounted charges at Laing's Nek on 28 January 1881. The Boer commandos themselves were representative of a particular military system combining dismounted firepower with mounted mobility. It had evolved in conflicts with Xhosa, Ndebele and Zulu since the 1830s, although its origins lay in the 'Burgher militia' organised at the Cape by the Dutch East India Company in the late seventeenth century. [11]

The second Anglo-Boer conflict - the South African War (1899-1902) - marked the apogee of British small wars practise both in terms of the numbers of horsemen deployed to counter the mobility of Boer commandos but also in terms of the cavalry versus mounted infantry debate. Following the surrender of the main Boer field army at Paardeburg on 27 February 1900, and the fall of Bloemfontein, the capital of the Orange Free State on 13 March, younger Boer leaders resolved at a *krijgsraad* (war council) at Kroonstad on 17 March 1900 to prolong the war by guerrilla action in order to compel the British to negotiate. The decision recognised, as the opening Boer offensives had not, that the commando system was ideally suited to guerrilla warfare. It was reasoned that mounted mobility would enable the Boers to surprise their opponents and to withdraw quickly in order to minimise the risk of taking casualties. The Boers could live off the veldt as well as captured supplies, and make use of their field skills and local knowledge to outwit the British. The war council marked the eclipse of the older generation of Afrikaner military leaders, who were seen to have failed to adapt to new conditions and who remained opposed to offensive and mobile warfare. The new leadership was younger on average by 21 years, better educated, and had had some exposure to French and German instructors. [12]

On the one hand in response, the British raised large numbers of local mounted men from the Cape Colony and Natal but also from the white dominions of Australia, Canada, and New Zealand. In addition, in Britain itself, the Imperial Yeomanry was recruited from the domestic mounted yeomanry force and other wartime volunteers in three annual contingents. The Imperial Yeomanry alone

11 Tim Stapleton, 'South Africa', in Britain (ed.), *Citizen Soldiers and the British Empire,* 139-54, at 139-43; Ian van der Waag, 'South Africa and the Boer Military System', in Peter Dennis and Jeffrey Grey (eds), *The Boer War: Army, Nation and Empire* (Canberra, ACT: Army History Unit, 2000), 45-69.

12 Ian F. W. Beckett, 'Strategies of Guerrilla Warfare', in Beatrice Heuser and Isabelle Duyvesteyn (eds), *The Cambridge History of the Practice of Strategy* (Cambridge University Press forthcoming).

totalled over 34,000 men. [13] In effect, these newly raised forces all performed a mounted infantry role, invariably dismounting to fight. To a large extent the conceptual difference between cavalry and mounted infantry was blurred in South Africa, one new mounted infantry tactic being the so-called 'galloping charge' of a rapid frontal assault in extended line followed by completion of the attack on foot. [14]

On the other hand, traditionalists could point to the relative success of cavalry at Elandslaagte on 21October 1899 and at Klip Drift on 15 February 1900. By contrast, opponents pointed to the failure of the cavalry to cut off the Boers at Poplar Grove on 6 March 1900 but the traditionalists could attribute this to the woeful lack of 'horse mastership' that characterised all British operations in South Africa both by regular and irregular cavalry as well as mounted infantry. On the other hand, actions at Zand River on 10 May 1900 and Diamond Hill on 11/12 June 1900 suggested the utility of combined mounted and dismounted action. The picture, therefore, was not clear cut. [15]

At peak over 90 mounted columns were deployed across the veldt. Apart from the mounted columns pursuing Boer commandos, however, the latter's mobility was cut by lines of blockhouses and barbed wire entanglements. Over 8,000 blockhouses were constructed with a garrison of 50,000 troops and 16,000 black auxiliaries. Over 6,400 km of wire was strung linked to the lines. The so-called 'New Model Drives' from February 1902 onwards put increasing attritional pressure on the commandos even though British columns moved ponderously at times and did not always net significant numbers of prisoners. [16] There had been a tendency for cavalry traditionalists to suggest that the American Civil War had been some kind of aberration resulting from environmental factors and also from the fact that the armies had been largely composed of amateur citizen soldiers. In the same way, there was some belief that the conditions on the South

13 Stephen Miller, 'The South African War, 1899-1902', in Beckett (ed.), *Citizen Soldiers and the British Empire*, 155-70.

14 Winrow, *British Regular Mounted Infantry,* 100, 102, 179.

15 Stephen Badsey, 'The Boer War (1899-1902) and British Cavalry Doctrine: A Re-evaluation', *Journal of Military History* 71 (2007), pp. 75-97; Jean Bou, 'Modern Cavalry: Mounted Rifles, the Boer War, and the Doctrinal Debate', in Dennis and Grey (eds), *The Boer War,* 99-114; Iain Spence, '"To Shoot and Ride": Mobility and Firepower in Mounted Warfare', in idem, 115-28.

16 Ian F. W. Beckett, ''Imperial Policing to Guerrilla Wars: Adaptability in the British Army in South Africa, 1899-1902', in Peter Dennis (ed.), *The Skill of Adaptability: The Learning Curve in Combat* (Newport, NSW: Big Sky Publishing, 2018), 33-54.

Fig. 2, Bushveldt Carbineers, an Australian mounted unit including Henry Harbord "Breaker" Morant (1864-1902), which served in the Spelonken region of northern Transvaal, during the Second Boer War, 1901-1902 (Wikimedia Commons).

African veldt with its atmospheric clarity, and the lack of large scale topographical features or natural obstacles, were 'peculiar'. [17]

Appearing before the Royal Commission on the War in South Africa in 1902, Major-General John Brabazon, who had commanded the 2nd Cavalry Brigade before subsequently commanding the Imperial Yeomanry, declared the conditions different from any he had experienced in his previous six colonial campaigns. The value of his observations was perhaps offset by his advocacy of shock tactics by cavalry armed with tomahawks! Lord Esher remarked that Brabazon had drawn such 'graphic pictures of a cavalry charge under these conditions, so paralysing to the imagination of the Commissioners that they wholly failed to extract the General or themselves from the discussion of this

17 George Henderson (ed. by Neill Malcolm), *The Science of War: A Collection of Essays and Lectures* (London: Longmans, Green & Co., 1910), 371-72.

engrossing subject'. [18]

It was not perhaps surprising that in his classic study, *Small Wars: Their Principles and Practise*, first published in 1896 and updated in 1899 and 1906, Charles Callwell should devote an entire chapter to the cavalry and mounted troops. [19] Callwell drew mostly on British experience in Egypt and the Sudan, in South Africa, and on the North-West Frontier of India although acknowledging that the Boers represented 'a very different class of foe from most of the irregulars against whom civilised armies have to operate'. [20] However, he also alluded to Russian campaigns in Central Asia and what he termed US 'flying columns' on the Great Plains. In reality, his use of Russian examples was selective for the mounted Turkmen and Kazakh horsemen encountered by the Russians were not intimidated by Cossacks who simply 'came out of the same tradition of steppe raiding and nomadic warfare' as themselves. [21] Callwell, however, had no doubts as to the utility of mounted troops for colonial campaigning. He believed the lance still effective against 'savages or guerrillas', and felt regular cavalry trained to fight on foot preferable to mounted infantry in order to take advantage of opportunities for 'shock action'. [22] Indeed, whilst suggesting the 'drives' used against the Boers represented the 'last word in strategy directed against guerrilla antagonists', Callwell also noted that 'it would rarely happen that such heroic remedies would be necessary in operations against the class of enemy ordinarily met with in small war'. [23]

To a large degree, the role of British cavalry and mounted infantry alike in colonial campaigning was terrain specific in terms of the deserts of Egypt and the Sudan, and the open veldt of southern Africa. Yet, in the case of the British pacification of Upper Burma between 1885 and 1895, both cavalry and also mounted infantry made a particular contribution in forest and jungle. A small force of 98 mounted infantry riding Burmese ponies was improvised by Edward Browne from the Rangoon Volunteer Rifles, Lower Burma police, and his own

18 Ian F. W. Beckett, 'The South African War and the Late Victorian Army', in Dennis and Grey (eds), *Boer War*, 31-44, at 35.

19 Charles Callwell, *Small Wars: Their Principles and Practise* 3rd edn. (London: HMSO, 1906), 401-24.

20 Ibid, 413.

21 Alexander Morrison, '"The extraordinary successes which the Russians have achieved": The Conquest of Central Asia in Callwell's *Small Wars'*, *Small Wars and Insurgencies* 30 (2019), 913-36, at 926.

22 Callwell, *Small Wars*, 414, 422.

23 Ibid, 143.

regiment - the Royal Scots Fusiliers - to give the British more mobility during the initial invasion in 1885. [24] Three regular Indian cavalry regiments were then requested for the intended 1886-87 winter operations as the necessity for pacification intensified. Mounted men not only offered greater mobility and some ability to outflank opponents but the Burmese were also not used to horses and were apparently terrified of them. At peak, four Indian cavalry regiments were deployed but it was difficult to keep horses alive, 666 out of 2,092 being lost between October 1886 and October 1887 to diseases such as relapsing fever (*surra*), lumbar paralysis (*kumri*), and anthrax. [25]

Meanwhile, the mounted infantry in Burma was built up to a force of 825 divided into companies of 75 men, each attached to district headquarters and armed with carbines and artillery sword-bayonets. Few had any experience of mounted infantry work and Indian soldiers had little knowledge of horsemastership and took far longer to train to ride. Such was the perceived value of mounted infantry, however, that it was decided to retain it as an element within the regular garrison of Burma in 1894. In April 1887, a total of 1,600 men had been so employed but the force would now be established at 215 British and 300 Indian soldiers with increased pay to persuade infantrymen to volunteer for detached service. [26]

US mounted operations on the Great Plains of North America and in the American South West were also terrain specific in the face of the high mobility of Indian opponents. [27] It has also been argued that, deriving from the earlier traditions of irregular warfare in eighteenth century North America, a hybrid Texan 'way of war' emerged from fusion of Anglo, Spanish/Mexican, and Indian fighting methods. After an early reliance on an infantry response to Karankawa tribal opposition, there was recognition of the need for more mobility against the Waco and the Comanche. Horsemastership was highly valued and the devel-

24 Edmond Browne, The *Coming of the Great Queen: A Narrative of the Acquisition of Burma* (London: Harrison & Son, 1888), 132-33.

25 H. E. Stanton, *History of the Third Burmese War, 1885, 1886 and 1887: The Winter Campaign of 1886-87, and Subsequent Operations up to March 31st 1888* (Calcutta: Superintendent of Government Printing, 1889), 211-17; 'Notes on Cavalry employed in Upper Burma from October 1886 to October 1887', *SOAS Bulletin of Burma Research* 2 (2004), 29-38.

26 Ian F. W. Beckett, 'The Campaign of the Lost Footsteps: The Pacification of Burma, 1885-95', *Small Wars and Insurgencies* 30 (2019), 994-1019, at 1007-08.

27 Robert Watt, 'Raiders of a Lost Art? Apache War and Society', *Small Wars and Insurgencies* 13 (2002), 1-28; John Gates, 'Indians and Insurrectos: The US Army's Experience with Insurgency', *Parameters* 13 (1983), 59-68.

opment of the revolver in the 1840s was coupled with a preference for Rangers and volunteer militia rather than more permanent military organisations both in the Texas Republic after 1836 and also after Texas joined the Union in 1845. Effective mounted Texan forces countered frequent Indian and Mexican incursions. They also suppressed guerrilla activity in opposition to US forces within Mexico during the Mexican War (1846-48), albeit displaying extreme lethality and brutality that made the Texas Rangers a 'doubled-edged sword' adding 'both tactical value and lamentable brutality to American victory'. [28]

If the Texas Rangers resembled the Cape Mounted Rifles, they also resembled the North-West Mounted Police, which was established in 1873 to police the Canadian border with the United States and to supervise Indian tribes such as the Blackfoot and the Crow across the semi-arid rolling grasslands of the northern plains. The Mounted Police was also in the forefront of combating the North-West Rebellion along the North Saskatchewan River by Métis in 1885. [29]

It also needs to be borne in mind that baggage animals of all descriptions were routinely utilised in colonial campaigns. [30] In Zululand the destruction of the British No.1 Column at Isandlwana on 22 January 1879 led to the loss of 132 wagons, hundreds of oxen, and £60,000 worth of supplies laboriously collected for the invasion of Zululand. The first foray back to the stricken field in May was not to bury the dead but to retrieve any serviceable wagons. During the second British invasion of Zululand in May 1879 it was said that Lord Chelmsford's ox-wagons stretched out three to four miles further than his columns could travel in a day. [31]

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28 Nathan Jennings, *Riding for the Lone Star: Frontier Cavalry and the Texas Way of War, 1822-65* (Denton, TX: University of North Texas Press, 2016), 232. See also idem, 'Ranging the *Tejas* Frontier: A Re-interpretation of the Tactical Origins of the Texas Rangers', *Journal of South Texas* 27 (2014), 72-91; idem, 'Federalised Texas rangers: Counter-guerrilla Cavalry of the 1847 Mexico City Campaign', *Mexican War Journal* 23 (2014), 30-55; idem, 'Texas Ranger Auxiliaries: Double-edged Sword of the Campaign for Northern Mexico, 1846-48', *War & Society* 26 (2015), 313-34.

29 Andrew Graybill, *Policing the Great Plains: Rangers, Mounties, and the North American Frontier, 1875–1910* (University of Nebraska Press, 2007); idem, 'Texas Rangers, Canadian Mounties, and the Policing of the Transnational Industrial Frontier, 1885-1910', *Western Historical Quarterly* 35 (2004), 167-91.

30 For a study of military transport and its requirements in the late Victorian army generally with particular reference to Abyssinia, South Africa, Afghanistan, and on the North West Frontier , see George Armand Furse, *Military Transport* (London: HMSO, 1882).

31 Ian F. W. Beckett, *Rorke's Drift and Isandlwana* (Oxford: Oxford University Press, 2019), 8, 36.

Over 36,000 baggage animals were used in the British expedition to Abyssinia in 1867-68: 2,538 horses, 17,943 mules and ponies, 5,735 camels, 1,759 donkeys, 8,075 bullocks, and 44 elephants. [32] The celebrated march of a force led by Frederick Roberts from Kabul to relieve the siege of Kandahar in August 1880 during the Second Afghan War (1878-80) required 8,143 camp followers and 11,224 assorted baggage animals - mules, pack horses and ponies, donkeys, and camels - to support 10,148 fighting men. [33] Similarly, Sir William Lockhart's Tirah Field Force on the North West Frontier of India in 1897 comprised 34,506 combatants, 19,934 non-combatants (followers and drivers), and 42,810 transport animals: over 103,000 were used in the campaign as a whole with the Tochi and Malakand Field Forces also deployed against a major tribal uprising.[34]

Mules in particular remained a feature of colonial campaigning on the North West Frontier into the 1930s. Equally, the *Small Wars Manual* first published by the US Marine Corps in 1935 and reflecting experience gained in such interventions as those in the Dominican Republic between 1917 and 1922, and in Nicaragua between 1927 and 1933, contained sections on animal transportation. [35] As it happened, it also had sections on mounted warfare. Whilst noting the greater mobility and visibility of the mounted man, it suggested he was more conspicuous to an opponent and those on foot would be better off in an ambush. Indeed, the manual concluded that, whilst they had been used on many occasions, unless the patrol was small and riding conditioned horses, deployed for no more than two days and operating relatively peaceful areas, 'the use of the hastily organized mounted patrol in hostile territory is rarely justified'. [36] Pack animals, principally mules, were still a feature of many campaigns in the Second World War including British operations in Burma and allied operations in Italy.[37]

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32 Trevenen Holland and Henry Hozier, *Record of the Expedition to Abyssinia* 2 vols. (London: HMSO, 1870), I, 234; II, 436-39.

33 Edward Chapman, 'The March from Kabul to Kandahar in August and the Battle of the 1st of September 1880', *Journal of the Royal United Service Institution* 25 (1881), 282-315. For the use of baggage animals with particular reference to the Second Afghan War, see James Hevia, Animal Labor and Colonial Warfare (Chicago: University of Chicago Press, 2018, 27-49.

34 Colonel H. D. Hutchinson, *The Campaign in Tirah, 1897-98: An Account of the Expedition against the Orakzais and Afridis under General Sir William Lockhart based on Letters Contributed to The Times* (London: Macmillan & Co., 1898), 77-78.

35 USMC, *Small Wars Manual* 2nd edn. (Washington DC: Government Printing Office, 1940), III, 25-30.

36 Ibid, II, 42; VII, 50-51.

37 Thomas Webb, Chris Pearson, Penny Summerfield and Mark Riley, '"More-than-Human Emotional Communities": British Soldiers and Mules in Second World War Burma', *Cultural*

Popular enduring mythic ideas of doomed Polish horsed cavalry confronting German tanks at Krojanty in September1939 are familiar but entirely false although Polish cavalry did engage German infantry. [38] The Red Army employed cavalry on the Eastern Front throughout the war in a variety of roles whilst the Wehrmacht, already heavily dependent on horsed transport, fielded eight cavalry divisions, only three fewer than the German army in the First World War. [39] The last horsed charge of the US Army was by a troop of the 26th Cavalry Regiment (Philippine Scouts) against Japanese infantry (albeit supported by light tanks) in January 1942. In the case of the British Army those cavalry regiments yet un-mechanised in the 1st Cavalry Division contributed successfully to the campaign against Vichy forces in Syria in 1941. [40] The rugged desert terrain in Syria was ideally suited to mounted units.

Notwithstanding the success of mounted infantry in Burma, it can be argued that the use of mounted forces in countering modern insurgencies since 1945 has also been terrain and even region specific. The particular examples that can be noted are those of the Portuguese campaigns in Angola and Mozambique between 1966 and 1974, the Rhodesian counter-insurgency effort between 1972 and 1979; and South Africa's border wars in Angola and Namibia between 1974 and 1985. [41]

In each case, the terrain in which mounted forces were introduced was difficult for vehicles, notably in the rainy season. In Portuguese Africa and Rho-

and Social History 17 (2020), 245-62. For mules in the British army generally, see Anthony Clayton, *The Mule in Military Service* (Market Harborough: Book Guild Publishing, 2017).

38 Steven Zaloga, *Poland, 1939: The Birth of Blitzkrieg* (Oxford: Osprey Publishing, 2002); Jacek Czarnecki, 'The Rebirth and Progress of the Polish Military during the Interwar Years', *Journal of Military History* 83 (2019), 747-68.

39 John Harrel, *Soviet Cavalry Operations during the Second World War: The Genesis of the Operational Manoeuvre Group* (Barnsley, Pen & Sword, 2019); Gervase Phillips, 'Scapegoat Arm: Cavalry in Twentieth Century Anglophone History', *Journal of Military History* 71 (2007), 37-74, at 66; Rich DiNardo and Austin Bay, 'Horse-drawn Transport in the German Army', *Journal of Contemporary History* 23 (1988), 129-43.

40 Jonathan Washington, *Fighting Vichy from Horseback: British Mounted Cavalry in Action, Syria, 1941* (Warwick: Helion & Co., 2023); Simon Anglim, 'Callwell versus Graziani: How the British Army applied "small wars" techniques in major operations in Africa and the Middle East, 1940-41', *Small Wars and Insurgencies* 109 (2008), 588-608.

41 For overviews, see Ian F. W. Beckett, 'The Portuguese Army: The Campaign in Mozambique, 1964-74'; idem, 'The Rhodesian Army: Counter-insurgency, 1972-79'; and Francis Toase, 'The South African Army: The Campaign in South West Africa/Namibia since 1966', in Ian F. W. Beckett and John Pimlott (eds), *Armed Forces and Counter-insurgency* (London: Croom Hel, 1985), 136-62, 163-189, 190-221.

desia, the security forces did not have access to adequate supplies of advanced technology with helicopters particularly few in numbers. Manpower was also a constraint in Rhodesia. Mounted troops had advantages over vehicles in the open savannah or *chanas* of eastern Angola, elevated areas of high grassland cut by a multitude of watercourses, which could become impassable to vehicles in the rainy season. The same was true of the bush of Rhodesia's border areas and of South West Africa/Namibia. Horses gave mounted troops good visibility over tall grass and bush. Horses could also sense threats and give warning by such signs as the ears suddenly going forward. There was a general belief that insurgents were psychologically intimidated by the sudden appearance of relatively silent horses, which could cross country without keeping to any anticipated route although inevitably there were natural horse noises that could not be disguised. The speed and endurance of the horse was greatly superior to a man on foot and it was quite possible to cover up to 50 km a day. It many respects horses were more reliable than mechanised vehicles in difficult terrain. The horse was also something of a shock absorber in the event of mine detonation. Overall, the 'horse's relative silence, heightened sensory perception, terrain-versatility and speed proved more useful in certain contexts than the foot soldier and armoured vehicles'. [42]

Mounted units could also be integrated into more conventional operations combining horse, vehicles, and available helicopters. There were disadvantages in that, whilst the horse could be acclimatised to the noise of helicopters and small arms, it could be spooked by rocket fire and sudden explosions. Logistic solutions also needed to be found in terms of providing water and fodder and, in southern Africa generally, mounted operations could not take place in areas affected by trypanosomiasis borne by the tsetse fly. Deployment of mounted infantry, however, was still an effective low cost adaptation to the circumstances encountered in combatting insurgency over vast areas without recourse to adequate technology.

The Portuguese had not been that successful in introducing cavalry when first encountering indigenous opposition in Angola at the time of its initial conquest in the late sixteenth century despite expectations they could repeat the Spanish use of the horse in the conquest of Central America. [43] By the late nine-

42 Jacques de Vries and Sandra Swart, 'The South African Defence Force and Horse Mounted Infantry Operations, 1974-1985', *Scientia Militaria* 40 (2012), 398-428, at 414.

43 John Thornton, 'The Art of War in Angola, 1575-1680', *Comparative Studies in Society and History* 30 (1988), 360-78; Antonio Espino López, 'El uso táctico de las armas de fuego en

teenth century, the Portuguese had re-introduced cavalry into their pacification campaigns in Africa although with mixed results due to poor planning and organisation. The same was true of their use of mounted troops against German forces in both German South West Africa and Portuguese Mozambique during the First World War. [44]

With the onset of insurgency in Angola in 1961, a number of Portuguese cavalry officers began to advocate the use of mounted troops with articles appearing in the military journal, *Revista da Cavalaria* ('Cavalry Review'). Those by Captain António Ferrand d'Almeida (1963 and 1964) brought further supportive contributions by Lieutenant Colonel Luís Barros e Cunha (1965 and 1967), and Major Joaquim Miguel Duarte Silva (1965 and 1968), who had represented Portugal in Olympic equestrian events. [45] Use of mounted troops was mooted not just in military terms but also in terms of maintaining contact with indigenous populations in remote areas: in effect, helicopters just overflew the population. With a new insurgent front emerging in eastern Angola in 1966, much of the terrain was unsuitable for vehicles and helicopters were in short supply. Moreover, the high grass impeded infantry visibility. Consequently, an experimental mounted platoon was authorised in September 1966 and sent to Silva Porto in eastern Angola in January 1967 under the command of Lieutenant Alferes Manuel Neves Veloso with horses initially acquired from South Africa. Subsequently, hardier horses were imported from Argentina.

The location was served by a railway from which the platoon could be kept supplied although subsequently mounted units were deployed closer to insurgent infiltration routes. In effect, they were mounted infantry rather than traditional cavalry. Individuals were armed with the G-3 automatic rifle for combat on foot and with semi-automatic Walther P-38 pistol for mounted combat. Uniforms and equipment were worn and adapted according to individual preferences. Saddles were conventional cavalry models. A careful routine of walk, trot, gallop, and rest was introduced to enable long patrols of up to five days with heliborne or truck resupply subsequently sustaining even longer patrols. Daily consumption of food and fodder was also carefully regulated with vitamin supplements,

las guerras civiles peruanas (1538–1547)', *Historica* 36 (2012), 7-48.

44 John Cann, *Portuguese Dragoons, 1966-74: The Return to Horseback* (Warwick: Helion & Co., 2019), 9-20.

45 Miguel Freire, 'Back on Horseback: Finding Adaptive Tactics for Counter-insurgency in the 1960s and 1970s', Paper presented to the 41st Congress of the International Commission of Military History at Beijing, 1 Sept. 2015, 11-14; Cann, *Portuguese Dragoons*, 35.

mineral salts, and regular vaccination and medication intended to keep horses fit. Invariably, horses carried about 18-22 kg of granulated feed, divided into small plastic bags to preserve it from humidity. A combat ration was distributed to each man per day. Generally, water supplies were plentiful. [46]

The mounted units were used to protect the flanks of infantry or, supplied by helicopter or trucks, to mount longer range patrols. Horsemen could also be used to drive insurgents towards other units dropped by helicopter and to sweep areas for those insurgents who had escaped encircling operations. Adopting various tactical formations enhanced flexibility. [47]

With the experiment judged a success three squadrons - each of 138 men - were deployed in 1968 through re-rolling an armoured car unit. Known initially as the *Grupo de Reconhecimento de Angola* (Angola Reconnaissance Group), they were renamed the *Grupo de Cavalaria nº1* (1st Cavalry Group), and popularly but unofficially known as *Dragões de Angola* (Dragoons of Angola). Dragoons, of course, had been the original designation of mounted infantry in European armies in the seventeenth century. The Portuguese squadrons included some indigenous recruits from indigenous Cuanhamas and Cuamatos, who were used to raising cattle and could be attuned readily to working with horses.

With insurgency growing in Mozambique, establishment of a cavalry squadron was authorised there in August 1972. It was based at Vila Pery in the highland area close to the Rhodesian border judged most suitable for mounted operations. As in the case of Angola, the idea of using horses in Mozambique originated through articles in *Revista da Cavalaria* by Lieutenant Colonel Jorge Mathias (1970 and 1971), Captain Vasco Ramires (1970), and Captain Luís Manuel Silveira Vicente da Silva (1971). Another article by Lieutenant Colonel Fonseca Lage was devoted to co-ordinating cavalry with helicopters (1971) whilst a conference on the use of cavalry in counter-insurgency was also organised by the Institute of Higher Military Studies in 1971. The value of mounted troops as a special intervention force was fully recognised. [48]

Horses were obtained from Rhodesia but the raising of the Mozambique

46 Cann, *Portuguese Dragoons*, 36-40.

47 John Cann, *Counter-insurgency in Africa: The Portuguese Way of War, 1961-1974* (Westport, CT: Greenwood, 1997), 134-40.

48 Freire, 'Back on Horseback', 17-18; Cann, *Portuguese Dragoons*, 36. See also Pimenta de Castro, 'Emprego da Cavalaria clássica na luta contra a subversão', *Revista da Cavalaria* (1971), 204-220, and Luis Pinto, 'As Unidades a Cavalo na Contra-subversão no Ultramar Português' (Lisbon: Military Academy, 2010, 40-41.

squadron was rushed. There were deficiencies of equipment and also an attempt to train recruits in six weeks rather than the three months usual in Angola. There was also a lack of indigenous groups used to working with cattle. The *1º Esquadrão e Cavalo* (1st Cavalry Squadron) comprising 183 men with 172 horses and eight vehicles was not operational until September 1973 and not fully ready until February 1974. This was just eight weeks before the military coup that toppled the Portuguese government and spelled the beginning of the end of Portuguese Africa. Patrols were mounted from September 1973 but they were not of the same duration as in Angola and often resulted in no contact with insurgents. [49] Compared to the significant success of the dragoons in reducing insurgency in Angola, therefore, deployment in Mozambique was not generally successful.

In Rhodesia the mixed race unit known as Grey's Scouts was raised in July 1975 drawing on both white and some black Rhodesians and with the addition of experience trackers from the Shangaan ethnic groups. [50] It took its name from a volunteer force raised for the Bulawayo Field Force during the Ndebele Revolt in March 1896 by George Grey, the brother of the future British Foreign Secretary, Sir Edward Grey, and not to be confused with the Hon. Albert Grey, later 4th Earl Grey, and Administrator of Rhodesia from 1894 to 1897. Initially, the unit had 50 men selected by Grey from fellow settlers. Subsequently, it also served against the Nshona, who rebelled in June 1897. [51]

With the real beginnings of insurgency in Rhodesia in 1972 - there had been some limited insurgent incursions in 1966 - Bruce Rooke-Smith, a former officer in the British army, wrote a paper on the potential use of mounted infantry based on what he could learn of Portuguese operations in Angola. He did so at the request of another former British cavalryman, Colonel John Shaw. Nothing came of this but the idea was then revived in 1974 by Captain (later Major) Alexander Fraser-Kirk leading to the formation of the Animal Transport Unit at Inkomo under the command of Major Tony Stephens. Following trials, a single squadron of about 200 men was authorised in January 1975 with volunteers from amongst Rhodesian regulars, Territorials, and national servicemen. In September 1975 this became the Mounted Infantry Unit and was then officially

49 Cann, *Portuguese Dragoons*, 55-59.

50 Tim Stapleton, '"Tracking, tracking and more tracking was their motto": Bush Tracking and Warfare in Late Twentieth-century Southern Africa', *War & Society* 34 (2015), 301-23.

51 Alexandre Binda, *The Equus Men: Rhodesia's Mounted Infantry - The Grey's Scouts, 1896-1980* (Warwick: Helion & Co., 2015), 16-50.

renamed Grey's Scouts in July 1976. [52] 'A' Squadron had three troops of 24 men, each armed with a 7.62mm FN or, later, the 7.62mm G3, and comprised of regulars and national servicemen. 'B' Squadron was formed in 1977 from Territorials. Three members of Grey's Scouts visited the South African Defence Forces' Equestrian Centre in 1976 to compare methods whilst three others attended the Horse-masters' Course at the Ascot Equitation Centre in the United States. [53]

Grey's Scouts eventually reached a total strength of 800-1,300 men including specialists such as farriers, saddlers, stable managers, blacksmiths, and vets. All members were taught how to care for their mounts and to deal with, and to prevent, common ailments as well as snake bites and bee stings. By 1978 there were three 'sabre' squadrons, each organised in three troops, and a support squadron that included reconnaissance, tracking and mortar sections. There was also a dog section. Horses were primarily small but hardy South African cross-breed *Boerperdes* with some motor transport available to deploy men and horses rapidly. Specially developed, the horse-carrying vehicles had an armoured and mine-proofed cab and could transport eight horses. It was not uncommon for the unit to cover up to 50 km a day and to operate for up to five days at a time, or for up to ten days if pack animals were taken. An individual horse might be required to carry 280-320 lbs in weight in terms of a man and equipment. Dense bush or swampy areas could cause problems as would crossing any major water courses. Some areas were also prone to tsetse fly. The McClellan saddle, based on the pattern first developed by General George McClellan and issued to the US Army in 1859, was the preferred model. In classic mounted infantry style, Greys Scouts dismounted to fight although they were trained to use weapons whilst mounted.

The 'cordon sanitaire' of border mine fields had not generally been successful in curtailing guerrilla infiltration and the border bush terrain was not especially suitable for vehicles, especially in the rainy season. [54] Despite the ingenuity of the Rhodesians in developing mine-proof versions such as the Rhino, Puma, Leopard and Pookie, vehicles were vulnerable to mines. In any case, petrol was in short supply and helicopters limited in numbers. The latter were needed primarily for 'fire force' operations, by which a concentration of firepower and mobility was designed to offset lack of manpower: four heliborne 'sticks' would

52 Ibid, 60-69.

53 Ibid, 77, 79.

54 For the cordon sanitaire, see J. K. Cilliers, *Counter-insurgency in Rhodesia* (London: Croom Helm, 1985), 104-16.

drive insurgents back on paratroopers dropped at low level. Grey's Scouts, therefore, was used to patrol the border minefields but also to mount reconnaissance (some across international borders) and hot pursuit missions where insurgent tracks were detected. The Rhodesian Security Forces' *Counter-insurgency Manual Part II - Atops (Anti-terrorist Operations in Rural Areas)* issued in 1975 had a section devoted to 'Cavalry' that emphasised the advantages of speed, surprise, psychological shock effect, endurance, adaptability, and carrying capability. It also acknowledged limitations in terms of certain types of terrain such as dense bush, and the increased logistic requirements. Apart from patrolling and follow up operations, the manual also noted the way in which mounted troops could assist in population control and for 'visiting populated areas to maintain contact with the locals'. [55]

Deployment began in June 1976 in the so-called Operation Hurricane operational area in north eastern Rhodesia where the frontiers of Zambia and Mozambique met. The squadrons came directly under the command of Combined Operations Headquarters for operations from 1977 onwards although they were administered by HQ Salisbury District. These operations were often conducted in conjunction with the Selous Scouts although the idea of using Grey's Scouts in a Fire Force role in 1977 was not pursued. [56] Inevitably, some horses were lost to mines whilst some others bolted under heavy fire or as a result of explosions, or were stampeded by wild animals such as lions and elephants. Those that bolted were often lost to wild animals and some were even encountered later running with zebra herds although some were recovered. [57]

With the internal political settlement that created Zimbabwe-Rhodesia in June 1979, some thought was also given to deploying Grey's Scouts in deep penetration patrols into Mozambique but this was also stillborn. Following a last encounter with insurgents in February 1980 and the unit's inclusion in contingency plans to deal if necessary with insurgents gathering at assembly points in accordance with the Lancaster House agreement, a final parade was held in May 1980. [58] There is no doubt that they had played a significant role in countering insurgency although, of course, like Portuguese counter-insurgency, Rhodesian

55 Binda, *Equus Men*, 69-71 reproduces part of the manual but not the sub-section on 'Tactical Employment'. See https://pdfcoffee.com/rhodesian-counter-insurgency-manual-pdf-free.html

56 Binda, *Equus Men*, 91.

57 Ibid, 100, 241.

58 Ibid, 207-18

efforts ultimately failed to prevail in face of geopolitical changes over which the security forces had no control.

The horses deployed in Portuguese Africa and Rhodesia were mostly sourced from South Africa. It is not surprising, therefore, that the South African Defence Force (SADF) also utilised horsed units when operating against insurgents in Angola and Namibia, subsequently using them during instances of township unrest in South Africa itself. A SADF Equestrian Centre to train men and horses for their role was established at Potchefstroom in 1974 and the first mounted unit deployed in September 1974. Based on previous historic experience, it was the contention of General Magnus Malan, appointed Chief of the South African Army in 1973 and then Chief of the SADF in 1976, that insurgents in South West Africa feared horses more than tanks or guns. The first Commandant, Peter Stark, had been a notorious game poacher who had then been converted from poacher to gamekeeper by appointment as chief game ranger at Etosha National Park. [59]

Generally, a man kept the same horse on operations with which he had trained on a 21-week course of horsemanship, mounted weapon handling, and counter-insurgency. A new manual, *Training and Employment of Mounted Infantry* was issued in 1978 following study by a committee under Major Leon Wessels. The second commandant at Potchefstroom, Major (later Lieutenant Colonel) Albert van Diel, had also undertaken a fact finding mission to the Grey's Scouts in Rhodesia in 1975.

The McClellan saddle was again preferred as more suited to carrying men and 20kg of equipment for up to 30 km a day. The R1 assault rifle was later replaced by the Israeli Galil and the South African R4. Mine-resistant horse transporters were also developed, as well as special pre-packaged horse rations although, on occasions, the availability of fodder was limited. If water was not readily available, armoured personnel carriers with water tanks could be deployed whilst patrols were planned to make use of the cooler hours of early morning and later afternoon.

The primary role of the mounted units was undertaking fighting patrols, reconnaissance, following trails, cutting off insurgents in co-ordination with conventional forces, and sweep and pursuit operations. The 1 SWAPes (1st South West Africa Specialist Unit) was based at Oshievelo in South West Africa in 1978 and operated in the mountainous bush of Kaokoland. Initially command-

59 de Vries and Swart, 'South African Defence Force and Horse Mounted Infantry Operations, 398-428.

ed by Major David Mentz, it comprised two companies of mounted infantry, two platoons of trackers (including indigenous Kavango and San), two platoons of motorcyclists, and tracker dogs. Generally, horses were not taken into combat itself. Troops, therefore, dismounted in the event of contact and, when in combined operations with conventional forces, operated behind a screen of armoured personnel carriers. Naturally enough, insurgents also developed tracking and anti-tracking skills and they claimed to have captured SWAPes horses on occasions. [60]

When a state of emergency was declared in 36 districts of South Africa in 1985, SWAPes trackers and dogs searched for weapons caches in townships around Pretoria with mounted troops also used to overawe demonstrators as well as maintaining cordons. Given that horses were vulnerable in urban settings to such weapons as marbles, nails, and wire, they did not seem to attract particularly targeted violence compared to other elements of the police and security forces. Horses were also not apparently adversely affected by tear gas. Mounted companies were again deployed to townships in 1990. Post-apartheid, 12 South African Infantry Battalion took over the role of mounted infantry in 1993 but was disbanded in 2005 only to be reformed in 2011 as 1 Specialised Infantry Reserve Regiment at Potchefstroom.

The Chilean army and the Chinese Peoples' Liberation Army still utilise horsed units for security duties in rugged terrain in the Andes, and Inner Mongolia and Xinjiang respectively. The German army maintains a pack animal company as part of its Reconnaissance Battalion 230 in the Mountain Infantry Brigade. Likewise, in addition to ceremonial duties, India's 61st Cavalry supports the Indian Border Security Force and has been deployed in the past on operations against the Tamil Tigers in Sri Lanka in 1987, those ongoing in Jammu and Kashmir since 1990, and the border confrontation with Pakistan in 2001-2002. However, it is due to be mechanised as an armoured regiment. [61] The State of Maryland in the United States maintains a horse troop trained both for ceremonial duties but also for providing assistance to other state agencies in rural terrain. [62]

60 Stapleton, 'Tracking', 313-15.

61 https://theprint.in/defence/61-cavalry-isnt-just-a-ceremonial-army-regiment-it-played-key-role-in-pakistan-standoff-too/422948/

62 Ron Roberts, *An Overview of the Employment of Cavalry in History, with an Emphasis on the State Defense Force of the United States of America in the 21st Century* (Germantown, MD: State Defense Force Publication Center, 2007), 24.

In 2013 it was confirmed by the Ministry of Defence that, in the previous year, the British army had more horses than tanks: 501 to 334. [63] Of course, the horses were used by the Household Cavalry and the Royal Horse Artillery for ceremonial duties. Nonetheless, horses and pack animals have been utilised in recent years on operations. Having done so during peacekeeping operations in Bosnia in 1996-97, the Royal Scots Dragoon Guards mounted small horsed patrols on similar duties in mountainous terrain around Pudojevo twice weekly in Kosovo in 2000 where armoured personnel carriers could not be used: five Albanian horses were hired from local owners. [64] Having dispensed with its last mule troop in Hong Kong in January 1975, the British army also revived the use of pack animals in Afghanistan. [65]

To return to Afghanistan, Operational Detachment Alpha 595 had not expected to operate on horseback when dropped in the Dari-a-Sour valley to co-operate with the mounted forces of the Uzbek warlord, Abdul Rashid Dostum of the Northern Alliance. Only two men had previous riding experience although, as it happened, this included the unit's commander, Captain Mark Nutsch. Afghan mountain pony saddles were too small for Americans and the stirrups both too short and non-adjustable. Nutsch requested either McClellan saddles or lightweight Australian canvas saddles as conventional 'western trail' saddles were too large and too heavy when the ponies were already expected to carry around 75 lbs of equipment. A subsequent supply drop of Australian style cordura saddles was made but Dostum's forces had broken out into the Afghan northern plain by mid-November when another batch of unsuitable western trail saddles was dropped. By this time, the unit was operating from trucks so actual American horse-borne operations were of relatively short duration beginning with guiding a single B-52 mission on 21 October 2001. [66] Focussing solely on the efforts of the small American team in Dostum's successful advance down the valley to take Mazar i Sharif on 9 November 2001 arguably detracts to a degree from the achievement of the Northern Alliance but it is still the case that Dostum's cavalry charges, in which the Americans participated, were supported by close air support. [67]

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63 https://www.bbc.co.uk/news/uk-scotland-highlands-islands-22951548

64 *Herald Scotland*, 5 May 2000; https://www.nato.int/Kfor/chronicle/2000/nr_000803.htm

65 *Evening Standard*, 13 April 2012.

66 Briscoe, Kiper, Shroder, and Sepp, *Weapon of Choice*, 125-28.

67 Brian Glyn Williams, 'General Dostum and the Mazar i Sharif Campaign: New Light on the Role of the Northern Alliance Warlords in Operation Enduring Freedom', *Small Wars and In-*

Lessons were undoubtedly learned. The US Army had issued Field Manual 31-27 *Pack Animals in Support of Army Special Operations Forces* in February 2000, the first in 91 years. This was replaced by FM 3-05.213 *Special Forces Use of Pack Animals* in June 2004, totalling 225 pages, and supplemented by Army Training Publication, ATP 3-18.13 Special Forces Use of Pack Animals in 2014. Reflecting the Afghan experience, the McLellan saddle was firmly preferred to the western saddle. [68] The US Marine Corps had stopped using mules in 1953 but courses on riding and packing mules were reintroduced at the USMC Mountain Warfare Training Center at Bridgeport, California in 1983. [69] Horsemastership was then added to the courses taught there in 2011. Consequently, mules were deployed as pack animals by the USMC in Afghanistan.

An 'infamous' yet apocryphal quotation usually ascribed to the dedicated cavalryman, Field Marshal Sir Douglas Haig, in 1926 is that aeroplanes and tanks would only prove to be accessories to the man and the horse. [70] Haig had never lost his faith in cavalry, having written in 1907 that 'the role of cavalry on the battlefield will always go on increasing. [71] In South Africa, where he had served as chief of staff to the Cavalry Division, he had concluded that mounted infantry 'have proved useless'. [72] In fact, as previously suggested, this was quite untrue for all that there were problems in improvising the large numbers of mounted infantry required to counter Boer mobility in the guerrilla war that ensued in South Africa in 1900.

Indeed, mounted infantry as opposed to cavalry *per se* have continued to prove themselves effective in the counter-guerrilla and counter-insurgent role even in an age of technology as demonstrated in Portuguese Africa, Rhode-

surgencies 21 (2010), 610-32.

68 FM 3-05. 213 *Special Forces Use of Pack Animals* (Washington, DC: Headquarters of the Army, 2004), 6-5. See also Christopher Booth, 'Mules: The AK-47 of Logistics: Recommitting to Pack-animals Across the Spectrum of Conflict', *Small Wars Journal* found at https://smallwarsjournal.com/jrnl/art/mules-ak-47-logistics-recommitting-pack-animals-across-spectrum-conflict.

69 https://eu.usatoday.com/story/news/nation/2014/06/22/horses-marines-afghanistan/10744395/

70 Williamson Murray, 'Armoured Warfare: The British, French and German Experience', in Williamson Murray and Alan Millett (eds), *Military Innovation in the Interwar Period* (Cambridge: Cambridge University Press, 1996), 6-49, at 27-28.

71 Douglas Haig, *Cavalry Studies* (London: Hugh Rees, 1907), 9.

72 Gerard de Groot, 'Ambition, Duty and Doctrine: Douglas Haig's Rise to Command', in Brian Bond and Nigel Cave (eds), *Haig: A Reappraisal 70 Years* On (Barnsley: Leo Cooper, 1999), 37-51, at 44.

sia, South Africa, and, most recently, in Afghanistan. As summed up by the last commanding officer of Grey's Scouts, Lieutenant Colonel Chris Pearce, the horse was the means of transport for mounted infantry and not a 'fighting platform'. It conveyed many advantages: [73]

> Among these was 'Shock Action' where the enemy was overcome by the sheer power and speed of the mounted soldier pursuing him, to the point that he often broke contact and fled. Other key advantages included the cross-country capability of the horse, and the ability of a small Grey's Scouts sub-unit, to cover large areas and long distances which the ordinary infantry soldier could not possibly match. Also the inherent ability of the horse to cross differing and difficult terrain, to live off the veldt if necessary, naturally shortening the line of forward communications; to work effectively at night if needed; to provide early warning by visible to the rider through physical indicators… Perhaps the most significant characteristic of mounted infantry was flexibility and, in a war where helicopter support was always at a premium the Grey's could offer this advantage to a commander.

Thus, in certain circumstances and in certain types of terrain, the horseman can still perform a role in modern conflict.

73 Binda, *Equus Men*, 223.

"Bini Mauri in camelo, quem dromade nominant, equitantes" (two Moors riding an dromedary). From *Diversarum gentium armatura equestris. Ubi fere Europae, Asiae atque Africae equitandi ratio propria expressa est. Abrahamus Bruynus excude* 1585, fig. 50.

Cavalry Warfare: Conclusion

Jeremy Black

'All civil evolution is towards the elimination of manpower and animal power, and the substitution of mechanical power.'[1]

Lieutenant-Colonel George Lindsay, the Inspector of the British Royal Tank Corps, who had served in the Mounted Infantry in the Boer War in 1900-1, and in command of an armoured car unit in Iraq after World War One, was in no doubt in 1926. His views were shared by J.F.C. Fuller and Basil Liddell Hart, influential British advocates for military progressivism, whom he cited.[2] They saw tanks as the modern form of cavalry rather than a form of mobile artillery in infantry-support. The tension between these different tendencies for tanks were an important aspect of continuity with cavalry.

Others, however, were less happy about a transition from cavalry, and some urged the combination of cavalry with mechanised forces. Indeed, it was not until March 1942 that the office of the Chief of Cavalry was abolished in America; while the Soviet Union, Germany and Romania all used cavalry divisions during the war.[3]

This situation in the twentieth century invites attention to whether there was at least a parallel in an earlier period when cavalry variously supposedly became relevant and redundant in particular contexts. That, however, also raises questions about the developmental model employed in order to discuss cavalry, not least the ready application of the concept of redundancy.

The devastating character of cavalry is generally primitivized by being located in the 'Barbarian' invasions of the 'Dark Ages' and the feudalism of the Middle Ages (a European concept for the organization of history), the Middle

1 King's College London, Liddell Hart Library, Montgomery-Massingberd papers, 9/5/7, p. 9.

2 J.F.C. Fuller, 'Progress in the Mechanicalisation of Modern Armies,' *RUSI Journal* (February, 1925), p. 25.

3 J.T. Fowler and M. Chappell, *Axis Cavalry in World War II* (Oxford, 2001); D.R. Dorondo, *Riders of the Apocalypse: German Cavalry and Modern Warfare, 1870-1945* (Annapolis, Md., 2012).

Ages treated as a sequence of the 'Dark Ages.' Linked to this, there is an implicit or explicit assumption that subsequent usage of cavalry reflected a failure to modernize or, at best, an environmental adaptation that entailed redundancy as soon as more modern forces intervened. This approach, however, is misleading, not least because it exaggerates the role of cavalry in 'Dark Ages' and medieval warfare, and the extent to which the cavalry defines this warfare. A focus on this period also leads to a tendency to underrate the earlier triumphs of cavalry forces for example the total Parthian victory at Carrhae over the Romans (53 BCE). There is also the serious problem of primitivizing often sophisticated non-Western cavalry systems.[4]

The early sixteenth century is generally presented as a transition from the medieval past and seen in terms of the triumph of gunpowder forces, most obviously with Spanish victory over the Aztecs and Incas, the role of firepower in defeating Swiss pikemen and French cavalry during the Italian Wars (1494-1559), and, indicating that not only European power was at stake, with the series of spectacular Ottoman victories over the Safavids of Persia, the Mamlukes of Egypt, and the Jagiellons of Hungary in 1514-26.

But far from becoming redundant, cavalry forces could still be devastating, not least because they could make the transition to firearms, as shown by the Moroccans to victorious effect at the expense of the Portuguese at Alcazarquivir in 1578, and also, within Europe, by pistoleers in the mid-sixteenth century. The transition to firearms, however, was not necessary to the continued effectiveness of cavalry. Aside from the value of cavalry as a shock force, the use of mounted archers had for long combined firepower with the mobility of cavalry, providing a means to mount the attack and force the pace of battle that infantry lacked and were to continue to lack until they were mechanised in the twentieth century. The earlier failure of infantry forces to exploit victory, repeatedly for example in the American Civil War (1861-5), was an important instance of the extent to which, although the mass firepower of infantry brought some important advantages, it lacked others that cavalry possessed, particularly mobility, both on the battlefield and off it.

Furthermore, although horse-archers are generally seen as a medieval force, as with the defeats of European heavy cavalry, for example by Saladin of the army of the kingdom of Jerusalem at Hattin in 1187 and by the Mongols at Liegnitz in 1241, they continued to be important in the 'early modern period.' Ming

4 J. Gommans, *The Indian Frontier, Horse and Warband in the Making of Empire* (London, 2018).

Chinese advances against the Manchus in the early seventeenth century were defeated by the mobile mounted archers of their opponents, while the Mughals made successful use of mounted archers in India in the sixteenth century.

In addition, in considering military capability in terms of the objectives arising from strategic culture, it is also important to note the extent to which the ends and means of steppe warfare favoured raids, not battles, and therefore benefited cavalry. The traditional tactics of steppe warfare, such as feints, both advances and retreats, continued to be valuable, playing a major role in battles between the Safavids and the Uzbeks in the sixteenth century, and the Afghans and their opponents in the eighteenth. In addition, the bow remained more accurate than the musket until the nineteenth century. The slow rate of fire of the latter was also a problem as was the availability of shot and powder. As a result of these deficiencies of musketry, the relative position of cavalry was enhanced, because musketry was the classic form of infantry firepower.

The continued vitality of cavalry helps counter claims that Eastern European states were backward because they did not adopt the emphasis on infantry firepower seen in Western Europe. In part, this reflected the availability of horses in Eastern Europe and also that of grassland which reduced the need to rely on more costly dry forage and, in addition, all the issues involved in transporting it. In 1753, the French envoy in Vienna reported that it cost twice as much to feed a horse in Bohemia that in cost in Hungary.[5] Unlike Bohemia, Hungary had plentiful grassland. Alongside other costs, as well as issues of availability, this factor helped keep the ratios in Western armies focused on infantry, as with the Hanoverian army destined for campaign in March 1715 which, excluding officers, had 10,800 infantry, 2,340 cavalry, and 1,800 dragoons.[6]

Even in symmetrical warfare within the Western context, the potential of cavalry continued to be an issue into the twentieth century (while the use of horses and mules as draught animals was large-scale in World War Two, especially for the Germans), which raises questions about how best to assess the continued employment of cavalry in this period by non-Western powers and people. Part of the problem is the isolation of a given arm for purposes of analysis, and the widespread failure to consider its tactical integration with other arms, as well, irrespective of this, as the simultaneity of different arms, when assessing effectiveness. Thus, Lieutenant Hugh Pearce Pearson of the British 84th Foot

5 Aubeterre to St Contest, French Foreign Minister, 8 Dec. 1753, Paris, Archives du Ministère des Affaires Etrangères, Correspondance Politique (hereafter AE. CP.), Autriche.

6 Joined to letter of Rottembourg, 23 Mar. 1715, AE. CP. Br. Han. 45 f. 12.

wrote in 1857 to his parents from Cawnpore where he was taking part in the very difficult suppression of the Indian Mutiny. He noted that the rebels did not dare 'charge our little squares with their clouds of cavalry', a description that apparently paints a clear picture of the superiority of Western fighting methods, but continued 'They had most magnificent gunners'.[7] As with the Marathas in the 1800s and the Sikhs in the 1840s, the British encountered opponents with a range of capabilities.

As Pearson's case indicates, very selective quotations from a letter can be patronising and would create very different impressions of respective capability, and the same is more generally true. Despite the variety of factors that in fact comprise the fighting effectiveness of individual units and that should guide the analysis of particular sources and episodes, different accounts or models of the same events are not often allowed to co-exist in writing about war. However, they should do so, in order to capture its complexity.

Furthermore, expanding the nature of complexity, what a horse means has varied greatly, not least in terms of height and bone mass. So also with the availability of horses. Kaushik Roy emphasises the problems of India for the breeding of good-quality cavalry horses in large numbers.

While the importance of the post-medieval battlefield role of cavalry is considered, even if generally minimized, by Western scholars, there is frequently insufficient work on the organisational dimensions of cavalry, especially the supply of horses and the provision of fodder, both of which were crucial. Jos Gommans clarified the importance of the former for South Asian warfare in the eighteenth century,[8] but his valuable work needs to be matched for other periods. For example, the emphasis on firepower in the discussion of South Asia in the sixteenth century should be focused not only to note the continued major role of mounted archers, especially in the early decades, but also to appreciate that the widespread dispersal of firearms ensured that the key to success, for both Mughals (in India) and Safavids (in Iran), was not the possession of firearms, as others in practice matched this, but, rather, organisation. The latter was the case among those who fought, as well as in terms of exploiting agricultural resources and sustaining effective tribal alliances. Cavalry was important to post-nomadic empires[9] as well as to more nomadic polities. When imperial boundaries altered,

7 BL. India Office papers, MSS. Eur. C 231. He was to rise to a colonel.

8 J. Gommans, *The Rise of the Indo-Afghan Empire c.1710-1780* (3rd edn, Delhi, 2019) and *The Indian Frontier: Horse and Warband in the Making of Empires* (Delhi, 2018).

9 J. Gommans, 'War-horse and Post-nomadic Empire in Asia, *c*.1000-1800,' *Journal of Global*

there could be significant consequences for the availability of horses, as with the Turkish empire.[10]

Like the cult of the machine in the twentieth and twenty-first centuries, the role of cavalry repeatedly brings up cultural issues, not least in terms of the nature of pre-modern political, social, economic and fiscal systems and, therefore, of paths to modernity.[11] Cavalry, however, was generally seen in a positive light. For example, it is argued that the importance of the horse to the Spanish conquest of much of the Americas was exaggerated by Spanish contemporaries, in large part because of the cultural context, specifically the association of cavalry with honour and social status. Alongside an apparent contrast, fascination with cavalry could also play a role in the genesis of the twentieth-century cult of the machine. There was a common emphasis on movement; and this left some surprising legacies. Basil Liddell Hart explained that his bookplate included not only the 'Globe – to represent a global view and subject', but also Mongol horsemen 'because my theory of future mechanised warfare was evolved originally from my study of the campaigns of Genghis-Khan's all-mobile army of Mongols'.[12]

If cavalry is not seen as necessarily anachronistic in the early-modern period this offers a powerful check to implicit or explicit Eurocentric views. At the sociological level, this has consequences for assumptions about whether particular governmental–social systems were best, or at least better, suited to military success. This is an approach that is generally conceptualized in Western terms. There is a tendency to see the Western state, a defined body with unlimited sovereignty, as the model for governmental development, to present the military potency of Western powers as product and, in part, cause of this development, and to claim that Western expansion, especially at the expense of governmental systems that were not suited to the maintenance of substantial standing forces, demonstrated the validity of this analysis.

However, the contingent nature of this approach to the governmental context, or even motor, of military history requires examination, not least as a description of "the West." For example, in his important contribution to this volume,

History, 2 (2007), pp. 1-21.

10 W.G. Clarence-Smith, 'Horse, mules and other animals as a factor in Ottoman military performance, 1683-1918,' web article.

11 W.E. Lee, 'Conquer, Extract and Perhaps Govern: Organic economies, Logistics, and Violence in the pre-industrial World,' in E. Charters, M. Houllemare and P.H. Wilson (eds), *Global History of Early Modern Violence* (Manchester, 2020), pp. 235-61.

12 Liddell Hart to Brian Melland, 29 May 1961, King's College London, Liddell Hart Library, Liddell Hart papers, 4/31.

Jürg Gassmann underlines the significance for the weakness of Swiss cavalry of a lack both of centralised military structures and of a military ethos in favour of an elite force.

Furthermore, the standard account can be challenged chronologically from two directions. The first is from the present, with the argument that this model does not adequately explain the varied nature of governmental structures and political developments in the present day at the global scale, nor, indeed, the complex relationship between these developments and military capability. Secondly, there is the issue of the foreshortening of the past. It is problematic to read back from the later failure of governmental systems that were not suited to the maintenance of substantial standing forces, whether infantry or cavalry. This is true of societies in Africa or Amazonia in which political processes took place largely within and between kin groups. It is also true of many of the peoples between the Caspian and China: the long history of tribal confederations in Central Asia, of which Attila's Hun empire and the medieval Mongols were the most prominent, and the Dzungars, who were overthrown by the Chinese in the 1750s, the last powerful example.

To read back in this fashion entails repeating the nineteenth-century Western perception of the relationship between disciplined, drilled, well-armed, and adequately supplied permanent firepower forces, essentially infantry, and those that were not so armed, with the governmental dimension presented in terms of the superiority of states able to mobilize and direct resources to that end. This approach draws on the cultural, ethnic and geographical structuring of value that Western military history inherited from its Classical roots, not least in accepting the propaganda element in the works of Greek historians, such as Herodotus and their presentation of non-Greek, particularly Asian, forces, especially those of the Persians. The Greek emphasis was on infantry, while the non-Greek forces were more often cavalry. This contrast helped to establish pattern that was also applied to what were later seen as 'barbarians'.

The comparison of governmental sources of military power discussed above suffers from two contrasting directions. It makes overly simplistic civilisational assumptions of contrast and yet also can presuppose a "should-be" common goal against which different states can be judged. But the degree of organization required to create and support a large, permanent long-range navy, or large, permanent armies, was, across most of the world, not necessary to maintain military forces fit for purpose. Furthermore, the cost and value of such an investment also need to be considered. In addition, there is a problematic empirical dimension. In the early modern period, administrative sophistication did not

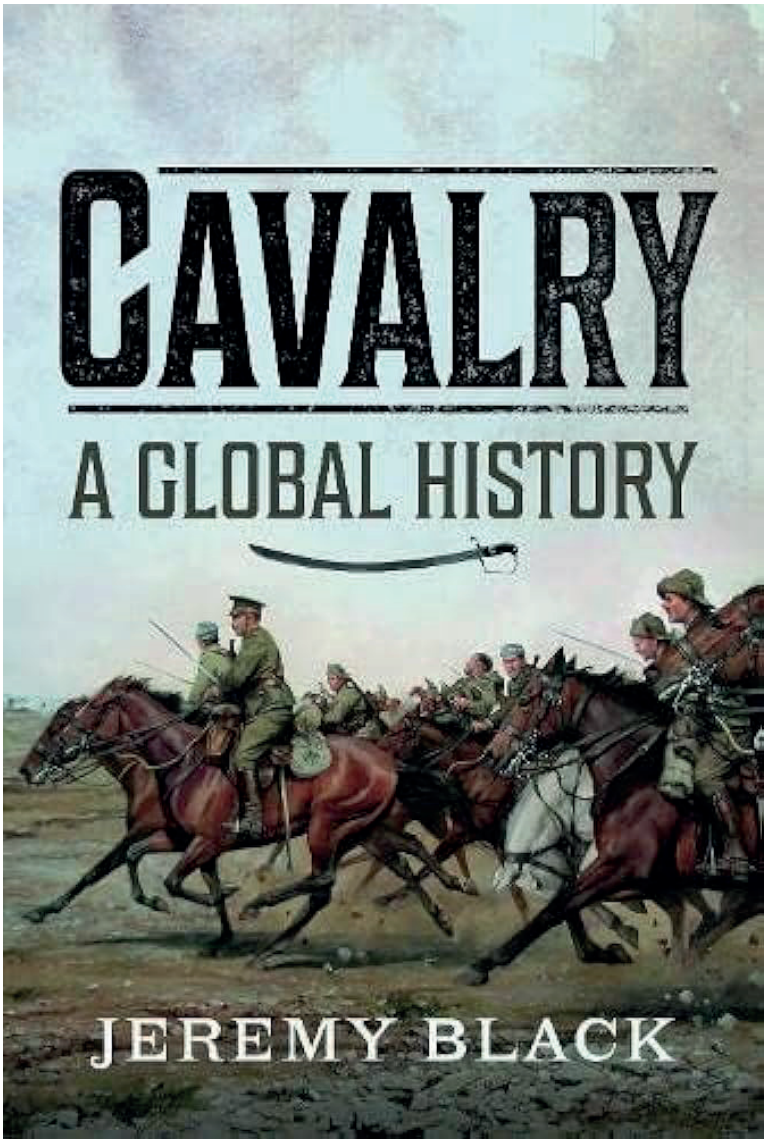
suffice for victory, as the Chinese, with their infantry armies, discovered with their defeats at Mongol and, more completely, Manchu hands in the mid-fifteenth and mid-seventeenth century respectively.

More generally, the central conceptual problem with military history is how to acknowledge, appreciate and analyse its diversity, including that in and through cavalry, and the conventional approach is apt to ignore this problem. Thus, for example, the focus in discussion on military revolutions is 'the West,' the definitions and guidelines are 'Western,' which tends to mean infantry, and, in so far as 'non-Western' powers feature, it is in order to record the success of their Western counterparts. This is not least in the victories of infantry over cavalry, for example that of Napoleon over the Mamluks of Egypt in 1798. There is, indeed, a circular quality in this analysis, which is a serious methodological limitation, and one that can be shared by an empirical failure to note developments in other cultures.

Looking to the future, it is probable that the account of military history will not move to some form of, as it were, disembodied or non-specific non-West but, rather, to China and India setting more of the agenda, as leading economies and certainly the two most populous countries. It is unclear what the history of cavalry will mean in such a context. Probably, there will be a recurrence to the idea of cavalry as the hostile "other," a process encouraged in China by a hostile attitude to steppe forces, one seen in 2023 with government action in Inner Mongolia against the legacy of the medieval Mongols. In India, alongside favour for the Marathas of the seventeenth-nineteenth century and their light cavalry forces, there is also a Hindu nationalism directed against the supposed legacy of invading Muslim cavalry armies including the Lodis and the Mughals, and culminating with the Afghans in the late eighteenth century.

This will be a reminder of the extent to which the history of cavalry, like military history as a whole, depends on the assumptions and politics of the present, and that these latter can be highly misleading. The treatment of cavalry is very much part of this process.

Ironically in light of some of the past certainty at particular moments about the obsolescence of cavalry and its modern historical counterparts, there is currently much discussion about redundancy, for example of both tanks and manned flight. In these and other cases, it is possible to add significant caveats, and this process might well be the relevant context for the past discussion of cavalry. In particular, it is important to put contexts and conjunctures to the fore, as well as to remember that cavalry was not one single state or outcome, and therefore had no one trajectory.



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