

greatest tactical effect by the enormous mass of arrows that they could rain down on an enemy within a short space of time. This made the provision of enormous numbers of arrows essential. Riesch thinks that every archer had 20–30 arrows in his quiver for immediate use. Together with reserve ammunition transported on pack-animals, a 500 men strong unit of archers should possess at least 20–30 000 arrows. Experiments show that one blacksmith together with two assistants could manufacture 30–40 trilobite heads or 60–70 square heads in 10 hours (p. 136f.). Thus, the military archery presented a considerable logistic challenge.

Contrary to wide-spread opinion, Riesch sees little evidence that, before the introduction of the Hunnish bow, the Roman archers used any form of release other than the “Mediterranean”, which means drawing the string with the three middle fingers. There are no hints in the written sources, no clear pictorial representations, and no thumb-rings as used in the Mongolian release. Even after that date, they do not seem to have exclusively used the “Mongolian” release (handling the string with the thumb) (p. 244).

Riesch’s admirable work has a few minor flaws, some of which fall to the responsibility of the publisher: the inner margins are so narrow that it is impossible to read the inner columns of the text without constantly pressing down the back of the book. As the book covers a huge geographical area from Britain to Korea, it is unfortunate that it contains not a single map except one of the *limes* on the Rhine and the Upper Danube. Sadly, almost every object, regardless if reproduced alone or together with other pieces, is described as “not to scale”, and the author does not clarify the measure of the objects.

To emphasise the scholarly nature of his work, the author indulges in an overkill of foreign words, unnecessary technical terms, sometimes of his own making, and all too often in a stilted style, considerably aggravating the very awarding reading. One example must suffice: “Es wird ansonsten generalisiert zutreffen, dass trotz aller Progressionen basale Aspekte der Bogenwaffe bei der Jagd und im Krieg persistierten” (p. 251). Further mistakes are irritating; e.g.: Kate Gilliver is not a male author (p. 16); the cult of Mithras was not invented in Rome in the 1st century AD (p. 30); the word *paseng* for the *bezoar* goat is not Latin but Iranian.

All in all, Riesch has done an outstanding work in synthesising the current state of affairs of the many different aspects of a wide, multi-faceted, not very well-documented field and discussing the numerous problems on the basis of a solid mastery of the literature and a vast practical experience. His goal to present the badly needed standard reference on Roman archery equipment is well achieved.

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HANS-PETER KUHNEN, Wüstengrenze des Imperium Romanum. Der römische Limes in Israel und Jordanien. Mit Beiträgen von Johanna Ritter-Burkert und Stefan F. Pfahl. Archäologischer Führer zum Nahen Osten 2. Nünnerich-Asmus Verlag, Mainz 2018. € 24.90. ISBN 978-3-96176-010-7. 224 pages with 213 illustrations and one map.

This is a welcome if rather unconventional monograph, extending even to its physical shape (21 × 21 cm), intended as both a semi-popular history of this topic as well as a guidebook. The title is something of a misnomer because the book contains much more than a mere treatment of the Roman frontier in Israel and Jordan; it in fact encompasses the entire eastern frontier of the

Roman Empire. It is dedicated to the memory of Mordecai Gichon, a great pioneer researcher on the Roman army and frontier in Israel who died in 2016.

The book consists of two main parts. The first includes short but essential sections on the natural environment and a review of earlier scholarship since the end of the 19th century. Both are well informed and accessible for the non-specialist. The latter section properly devotes some attention to the tragic intentional destruction of so many key cultural monuments during the Syrian civil war. Following this is a political and military history of Rome in the Near East from Augustus to Heraclius, nearly 100 pages in length. This considers the entire eastern frontier of the empire from the Black Sea in the north to the Red Sea in the south. This section is especially useful in order to place the southern or desert sector of the frontier, the main topic of the book, into a broader context. This is the focus of the last portion of the work, essentially a gazetteer of about three dozen key frontier sites (both military and urban) in Jordan and Israel. Additional materials at the end of the title include geographic coordinates of key sites, a chronology of specific research projects over the last century, and endnotes of references cited in the text. Unfortunately, there is no index. The book is lavishly illustrated, mostly in colour, with photographs, maps, plans, and other graphics. Nearly all these are of excellent quality and a real strength of the work.

Hans-Peter Kuhnen describes Roman expansion into the eastern Mediterranean as motivated by several factors (pp. 11–12). These include securing its agricultural wealth, large established urban centres, mineral (especially metal) resources, lucrative trade routes, and the strategic value of the Levantine land bridge. He carefully differentiates between the two major external threats to Roman rule in the region once indigenous internal resistance (especially the Jews in Palestine) had been crushed. The Parthians and later Sassanians naturally posed the main danger to the northern half of the eastern frontier, but H.-P. Kuhnen also stresses the threat posed by endemic nomadic raiding to the southern sector. He thus implicitly rejects the views of Benjamin Isaac and others who have downplayed the seriousness of these external threats, especially the Arab nomads, at least until the 4th century. The Jews and their troubled relationship with Rome naturally receive more extended treatment, in part because of the plethora of surviving evidence, both documentary and archaeological.

The summary of relations between Rome and the Nabataean kingdom is somewhat problematic. No one can creditably argue that Nabataea after 63 BC was an independent kingdom (“ein selbstständiges Königreich”, p. 35). It was in fact a client state with internal autonomy but clearly under firm if indirect Roman control. More debatable is the assertion, increasingly challenged in recent decades, that Trajan annexed the kingdom “without resistance”. Although the paucity of documentary evidence is ambiguous on this issue, there is growing archaeological evidence from various parts of the kingdom to suggest widespread resistance to the Roman conquest (for a convenient summary see S. Th. PARKER, *Arabia Adquisita: The Roman annexation of Arabia reconsidered*. In: A. Morillo et al. [eds], *Limes XX: Roman Frontier Studies. XXth International Congress of Roman Frontier Studies [Madrid 2009] 1585–1592*).

The summary history of Roman-Parthian relations (pp. 36–43) is brief but effective. H.-P. Kuhnen also offers the intriguing suggestion about the implications of Septimius Severus (193–211 AD) adding the title *Arabicus* (“conqueror of the Arabs”) for the first time alongside *Parthicus* in his official titulature. But we remain largely ignorant about the specific “Arabs” referenced in this title.

H.-P. Kuhnen gives proper attention to the mid- to late 3rd century as the real game changer on the eastern frontier (pp. 43–45). All scholars accept the significance of the replacement of the Parthian Empire by the Sassanian Persians, who clearly posed a much more formidable threat to Rome’s eastern frontier.

Turning to the northern frontier where the Romans and Parthians or Persians usually faced off against one another, H.-P. Kuhnen offers an excellent summary of the geo-political landscape (pp. 51–71). He rightly stresses that, given the explosion of research on the southern half of the eastern frontier since the 1970s, the eastern Anatolian sector and northeast Syria is now the most *terra incognita* portion of the eastern frontier and perhaps all of the imperial frontiers. Farther south, H.-P. Kuhnen presents informed and useful summaries of major military sites, especially Dura Europos (SY), with its unique treasure trove of both documentary and archaeological evidence. Both Dura and other key sites, such as Hatra (IQ), provide precious insights into the nature of siege warfare that frequently dominated conflict between the empires.

H.-P. Kuhnen next returns to the southern sector and the rise of the nomadic Arab (“Saracen”) threat to the Roman frontier (pp. 71–75). Although he observes a gradual coalescing of nomadic tribes into larger (and thus more powerful) confederations during the 2nd and early 3rd centuries, he credits the invention of the North Arabian camel saddle as the key factor in a “revolution in desert warfare”. He argued this point in detail nearly three decades ago (H.-P. KUHNEN, *Der Sarazenenattel: Zu den Voraussetzungen der Sarazeneninfälle am Limes Arabiae*. In: V. A. Maxfield / M. J. Dobson [eds], *Roman Frontier Studies* 1989. Proceedings of the XVth International Congress of Roman Frontier Studies [Exeter 1991] 326–334). There is no question in this reviewer’s mind that this new technology was a major factor that enhanced the military capability of the nomads, but whether it was *the* decisive factor remains debatable. As H.-P. Kuhnen notes, the earliest evidence for this new saddle dates back to the Nabataeans in the 1st century BC and was likely adopted by the nomadic Arabs not long after. But, as seen above, it is not until the turn of the 3rd century that the “Saracens” emerge as a major military threat. They were no doubt aided by the periodic bouts of civil war, plagues, Persian invasions, the Palmyrene revolt, and other problems that seriously weakened Roman rule in the mid- to late 3rd century. Further, the forging of larger and presumably more dangerous tribal coalitions enhanced the threat posed by the nomadic Arabs. Nevertheless, H.-P. Kuhnen is right to stress the importance of the North Arabian camel saddle, not adequately recognised in most earlier scholarship.

H.-P. Kuhnen then presents a valuable and insightful overview of the late Roman military installations on the Arabian frontier (pp. 76–87), stressing the sharp reduction in the size of both forts and (presumably) garrison units that suggests a new strategy of dispersed forces deployed in a military zone along the desert fringe. In essence, this is in accord with Edward Luttwak’s “defense-in-depth” strategy that he argues characterises all imperial frontiers at the turn of the 4th century. For the Arabian frontier, at least, it makes sense.

The remaining major portion of the book, a gazetteer of Roman military sites in Jordan and Israel, is an extremely useful and well-written guidebook, beautifully illustrated. This book should be required reading for anyone with an interest in Roman frontiers and the Roman army when visiting this region.

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