REVIEW ARTICLES

Res Militares

Israel Shatzman

M.M. Sage, *Warfare in Ancient Greece: A Source Book*, Routledge: London and New York, 1996. xxvii + 252 pp. ISBN 0-415-14354-3.

A.W. McNicoll, *Hellenistic Fortifications, from the Aegean to the Euphrates*, with revisions and an additional chapter by N.P. Milner, Oxford: Clarendon Press, 1997. xxv + 230 pp. ISBN 0-19-813228-X.

J. Roth, *The Logistics of the Roman Army at War (264 BC – AD 235)*, Leiden: Brill, 1999. xxi + 299 pp. ISBN 90-04-11271-5.

Whether writing monographs or general histories, Greek and Roman historians from Herodotus to Ammianus Marcellinus made wars the subject or central focus of their works. Thus not only the sheer space allocated to descriptions of war but also the underlying assumption that war is the central theme of human history have made Graeco-Roman historiography essentially military history. Nor were ancient historians alone in this view. Greek philosophers and writers took it for granted that 'war is as much part of the human condition as is disease or death' (thus M. Ostwald, in *SCI* 15, 1996, 103). 'What most men call peace is only a name; in reality undeclared war exists by nature between all *poleis* against all other *poleis*' (Plato, *Laws* 626a2-5). Sir Moses Finley begins his paper, 'War and empire in the Graeco-Roman world', *Ancient History: Evidence and Models*, London 1985, 67-87, by quoting this statement of Clinias, the Cretan speaker in Plato's dialogue. Finley goes on to express his acceptance of the truthfulness of this statement by observing that 'all historical peoples ... fought wars with unrelenting frequency. In the case of the Greeks and the Romans, the correct phrase is indeed "unrelenting regularity"' (p. 67). In a sense, then, modern historians who study Graeco-Roman warfare in its various manifestations

participate in an old tradition; they, too, attempt to describe, analyse, explain and understand this major and complex historical theme. The three works under review are no exception. The one by M.M. Sage is wide in scope, a veritable general survey of the whole theme of warfare in ancient Greece; the other two, by A.W. McNicoll and J. Roth, deal with two specific, clearly defined subjects. Despite several obvious differences between their subjects, the three authors, like many other scholars who investigate military history, make it clear that the forms and means of warfare and its development are closely linked to other phenomena which characterize the political and social setting. This is explicitly stated and occasionally highlighted by Sage, briefly acknowledged by McNicoll and implicitly shown by Roth. The lesson one learns is that the study of warfare should take into consideration a wide range of factors, including economic conditions, social modes of life, administrative systems, manpower resources, technological capabilities, moral values and religious beliefs. In the following remarks I shall have only a few specific comments to make about these matters, but they should be borne in mind throughout.

Sage's book offers much more than what might be expected from its sub-title. It opens with a succinct introduction which, in addition to delineating the role of warfare in Greek life and the availability and quality of sources pertinent to the subject, surveys the history of warfare in the Greek world from early times through the Hellenistic period. The survey is organized in five chapters: Early Greek Warfare: Homer and the Dark Ages; The Age of Hoplite Warfare; The Fourth Century; The Rise of Macedonia: Philip II and Alexander; Hellenistic Warfare. The texts translated are organized by main and secondary topics, and each of them is introduced by a short historical sketch. A great number of topics is presented, including — with some variation between the various chapters — weapons and equipment, heavy- and light-armed troops, cavalry, organization and tactics, command, battles, mercenaries, supply, fortifications, siege warfare, military payment, booty, the causes of war, peace treaties, social and ethical attitudes towards warfare, sports and warfare, the fate of the vanquished (massacres and enslavement), the Greek-Persian confrontation, etc. A well-selected and up-to-date list of modern works in English, general as well as specific studies, organized under the headings of the five chapters, follows the collection. Two indices, one general and one of the passages cited, complete the book.

Source books aim primarily at supplying students and scholars alike with a selection of original sources — either in the original language or in translation — as the basis for a study of a certain period (long or short) or a

subject (general or more delimited). The quality of the service they render to the user depends in the first place on the quantity and variety of the passages cited, as well as the representation of the inherent characteristics and problems of the subject or the noteworthy developments that took place during the period. The criteria and topics according to which the passages are arranged pave the way for a convenient study. Various tools may help the reader to use them efficiently, for example, introductory remarks, philological and historical commentaries, explanatory notes, bibliographical references, etc. Some source books are provided with the bare minimum in this respect, their authors apparently preferring to let the sources speak for themselves. An example of this type is D.C. Braund, *Augustus to Nero: A Source Book on Roman History 31 BC – AD 68*, London 1985, which contains only a bibliographical note, a short introduction on the types of the available sources and two indices. Another example is M.M. Austin, *The Hellenistic World from Alexander to the Roman Conquest*, Cambridge 1981. In addition to a note on the sources, a bibliography and two indices, this collection offers two maps, a table of rulers and a chronological table and short introductory and explanatory notes to every one of the passages cited. A different example, more relevant in content to the book under review, is B. Campbell, *The Roman Army 31 BC – AD 337: A Source Book*, London 1994. As well as providing an introduction on the sources and the army of the Republic, a list of the Roman emperors and one of weights, measures and money, eighteen plates and five figures, a selected bibliography and two indices, the author opens the nine main topics of the book with brief introductions. He also supplements many of the passages with explanatory notes and references to studies pertinent to the particular passage.

In several respects Sage's book is similar to those of Austin and Campbell. But there are differences. Thus it sometimes lacks explanatory notes for terms and persons mentioned in the passages and there are no references to specific studies on them. Plates, figures, maps, and various tables could also have enhanced the usefulness of the book. Another far more important difference is that, unlike the other books, the many short historical sketches and explanations add up to quite a substantial portion of the work. In other words, the author offers a survey and an interpretation of the history of Greek warfare, which are indeed linked to the sources quoted but only partially depend on them. In consequence, the student can form a more complete and clear picture of the central role of the subject in Greek life.

The sources selected vary and give quite a good representation of the significant characteristics of Greek warfare within the framework of the prevailing political and social conditions. They also serve to show the major

stages in the historical development of Greek warfare. Some omissions are surprising. Thucydides' account of the battle of Delium in 424 is quoted only in part to illustrate the use of cavalry (pp. 52-3), thus missing a rare opportunity to provide a full description of a hoplite battle (Thuc. 4.93-6). Thucydides' description of the siege of Plataea is rightly given (pp. 110-12), for it is a good illustration of the methods of siegecraft at that time. However, none of the extant accounts of sieges in the fourth century, for instance Motya by Dionysius I, Perinthus by Philip II, Tyre by Alexander the Great or Rhodes by Demetrius I, is given. Without these accounts it is difficult to realize the revolutionary change that took place in the art of siegecraft in that century. Another omission is Polybius' account of the battle of Raphia in 217, the only one we have of a major battle between armies of the major Hellenistic kingdoms (Polyb. 5.63-5; 79-86; cf. E. Galili, *SCI* 3, 1976/7, 52-125). But, given the richness of the collection, it is unfair to complain about such omissions. One can always demand improvement and perfection. As it is, Sage's book provides an excellent basis for the study of Greek warfare.

***

Our knowledge and understanding of Greek fortifications and siege warfare have immensely advanced in the last three decades thanks to the steady publication of major studies, comprehensive or more specific, not to mention numerous reports and investigations of excavations of relevant sites which have brought to light enormous new, or rather old, material. They include, in chronological order: E.W. Marsden, *Greek and Roman Artillery* I: *Historical Development*, Oxford 1969, and II: *Technical Treatises*, Oxford 1971; F.E. Winter, *Greek Fortifications*, London 1971; Y. Garlan, *Recherches de poliorcétique grecque*, Paris 1974; A.W. Lawrence, *Greek Aims in Fortifications*, Oxford 1979; J-P. Adam, *L'Architecture militaire grecque*, Paris 1982; J. Ober, *Fortress Attica*, Leiden 1985; P. Leriche and H. Tréziny eds., *La Fortification dans l'histoire du monde grec*, Paris 1986; S. Van de Maele and J.M. Fossey eds., *Fortificationes Antiquae*, Amsterdam 1992; L. Karlsson, *Fortification Towers and Masonry Techniques of Syracuse 405-211 B.C.*, Stockholm 1992, which, despite the title, also treats comparative material from mainland Greece and Asia Minor; and a special collection of 24 articles in a recent volume of *REA* 96, 1994, most of which deal with specific sites or problems and only a few with an overall assessment of

general developments. Last but not least is P.B. Kern, *Ancient Siege Warfare*, Bloomington and Indianapolis 1999.[1]

What is then the justification for this late publication of McNicoll's Oxford doctoral dissertation of 1971? The answer is that, in spite of all the advance made in the publications mentioned above, and as a result of many others as well, McNicoll's study has kept its value thanks to his in-depth investigations, clear exposition of the available evidence, ingenious suggestions for the solution of problems and, not least, his exemplary methodological treatment of his subject. This does not mean that there was no need for additions and changes, and McNicoll himself indeed intended to revise the work for publication before his untimely death in 1985, as J.J. Coulton informs the readers in the foreword. N.P. Milner undertook to carry out the required revision, mostly expressed in the form of annotated references to recent scholarly work in the footnotes (reaching 1994, except one reference to a 1995 publication) but also in a few explanatory additions in the text, all marked by brackets, mainly on points of detail. He has also supplied translations into English of Greek and Latin texts, a glossary and an index, which latter two could have been expanded with profit. Perhaps more important and useful, Milner has provided a concluding chapter, in which he summarizes, in the light of recent scholarly work, the main topics investigated by McNicoll and his conclusions, focusing on strategic concepts, tactical concepts and masonry. In this chapter Milner highlights the persistence of several pivotal problem which had engaged McNicoll in his research, in the work of all those who are interested in this subject.

The theoretical foundations and the guiding lines of the study are set forth in the opening chapter. These include the criteria for the selection of the sites examined: urban fortifications, rather than small military structures, a reasonable state of preservation, dated walls, diagnostic features, geographically related sites, and a historical record. The problems involved in the theory of a sequence of masonry styles are briefly sketched, as well as the technical terms employed in the description of masonry, for which L. Scranton's terminology (*Greek Walls*, Cambridge, Mass. 1941, 16-24) is followed, with some modifications and despite awareness of its oversimplifications. The style or styles of masonry used in any fortification project could be affected by various considerations, including aesthetic ideas (cf. Aristotle, *Politics*, 1331a; Winter 1971, 78-80, 84-8), topographical constraints, capability to withstand the various techniques of siegecraft, costs

---

1 These works will be cited in what follows as Marsden 1969 etc.

and the type of stone at hand. Hence, a particular style or type of masonry is not necessarily connected to a single period.

The discussion of the strategic concepts governing the location of walls (with a reference to Philo of Byzantium, *Poliorketika*, A84-5) is rightly more detailed. These were shaped by several factors which determined the planning and working of the architects responsible for the construction of the fortifications: terrain, state of siege warfare, potential enemies, availability of manpower for defence, financial resources, and the aims and wishes of those who ordered the works. With these are associated the concepts of 'the great circuit' (*Geländemauer*), and 'straight line'. The first refers to city walls so positioned as to prevent the enemy from gaining advantage from height, which often resulted in a loose relationship between the fortified enceinte and the inhabited area (cf. Winter 1971, 110). This type of fortification, established by the fifth century, was characterized by a passive attitude on the part of the defensive side. Given the limited means available to take a city by assault, whether by climbing, mining or breaking through (cf. J. Ober, 'Hoplites and Obstacles', in V.D. Hanson ed., *Hoplites*, London 1991, 180-6), in that period, even a relatively small number of defenders could defeat attempts to force an entry into the fortified area in any place along the long walls. With the advance made in the art of siege in the fourth century, particularly — as McNicoll and Milner emphasize — the development of artillery, first the non-torsion and later the torsion machines, a defensive system based on 'the great circuit' became a costly liability. Only powerful rulers with ample resources could afford to maintain the increased number of troops needed to man the whole line of defence and reinforce the fortified enceinte. However, in response to the new conditions, another system evolved, the 'straight line' type of fortification. The area chosen to be defended was reduced, tightly accommodated to the inhabited area, with the walls constructed from one high point to another by taking the straight, shortest line. This was sometimes achieved by constructing a cross wall (*diateichisma*). The 'straight line' implied an active concept of defence, for it provided quick access to the fortifications from the interior and various means to attack the besiegers, notably by sallies through posterns (cf. Milner on p. 213f.).

Tactical concepts, as defined by McNicoll, mean 'the individual features employed in a defensive system, by which the defender gains some particular advantage or advantages over the attacker' (p. 6). The ancient theory in this respect is best known from the *Poliorketika* of Philo of Byzantium, but needs to be tested by the ancient practice as revealed in the surviving fortifications. Several essential components of the defensive system are indicative

of the tactical thinking: gateways, sally-ports, towers, curtains, wallwalks, access steps and engine ramps, battlements, and ditches. Their study may sometimes provide a useful corrective of the theory.

In accordance with these parameters, McNicoll examines in detail the fortifications of twenty-seven cities, four isolated forts and six minor country fortifications. The sites are grouped together regionally, chronologically or thematically into eight chapters as follows: The Hecatomnids of Caria (Halicarnassus, Myndus, Alinda, Alabanda, Labraunda and six country fortifications in northern Caria); The Response to Macedonian Siege Warfare I: Democratically Built Fortifications (Priene, Cnidus, Erythrae, Colophon); II: The 'Great Circuit' of the Successors (Heracleia on Latmus, Seleucia Pieria, Dura Europus, Ephesus); Philip V at Iasus (Iasus); The Attalids and Southern Asia Minor (Oenoanda, Perge, 'Pednelissus', Cadyanda, Sillyum, Side); The West Coast in the Second and First Centuries (Teos, Ceraunus, Miletus); Isolated Towers and Forts (Myra East Fort, Myra West Fort, Loryma III, Diocaesarea); Sites with Fortifications of more than One Period (Assos, Caunus, Jerusalem). One city, Amos, is discussed in an appendix. The focus of the study is evidently on western and southern Asia Minor, while the Syro-Palestine space is under-represented and many regions of Asia Minor are not represented at all, although they are clearly referred to in the title of the work.

The chapters open with historical surveys, each presenting its particular subject (2-6), or short introductions which explain the choice of the sites discussed in the chapter (7-9). All but three (5, 8-9), for obvious reasons, end with a general discussion and analysis of the findings. Each site is studied, in so far as there is relevant evidence, under the following headings: location and history from early times to the Roman, sometimes even the Byzantine period; wall inscriptions; sieges; fortifications, including discussions of masonry and strategic and tactical problems. As a reminder of the lack of sources, one may note that only a few wall inscriptions are known: they are limited to seven sites (Erythrae, Colophon, Heracleia on Latmus, Ephesus, Teos, Miletus, Diocaesarea) and not all are particularly instructive. No sieges are recorded in historical sources in the case of nine of the cities examined (Alinda, Alabanda, Labraunda, Heracleia on Latmus, Oenoanda, Perge, Cadyanda, Side, Ceraunus), as well as in respect of all four of the isolated forts and the six country fortifications. However, one should resist the temptation to conclude that all these sites were never put under siege or assaulted.

As said before, in the final chapter Milner presents the general conclusions emerging from McNicoll's studies of the various individual sites and

follows him in underlining the close inter-relationship between political conditions and developments in siegecraft, on the one hand, and changes and innovations introduced in fortifications during the Hellenistic period, on the other hand. Some points are discussed afresh in the light of more recent research and finds, or simply by examining the old evidence anew. For instance, Milner rightly brings to the fore the new features of the 'great circuits' constructed by Hellenistic rulers, which, unlike the older ones, were equipped with many towers, jogs, salients, access steps and posterns. The walls were so constructed along the ridges and slopes of the fortified site that the defenders gained command of forward ground and were better able, with the help of these installations, to counter-attack the besiegers. Another example: Milner accepts and enlarges upon the suggestion, mainly based on finds from Old Paphos and Phocaea (F.G. Maier and V. Karageorghis, *Paphos: History and Archaeology*, Nicosia 1984, 194-203; O. Özyğit, *REA* 96, 1994, 90; P. Briant, *ibid.* 111-4; cf. also G. Rossoni, *EVO* 18, 1995, 213-9; P. Kingsley, *Prometheus* 21, 1995, 15-18), that some kind of artillery engine had been invented in the ancient near east and used by the Persians by the mid-sixth century (I am doubtful about such an interpretation of the finds, and hope to deal with this question elsewhere).

Many of the findings, observations and conclusions of this careful and thoughtful study deserve attention and emphasis or call for comment; my remarks here are confined to a few topics only, and first to that of artillery. It is generally agreed that the invention and development of the catapult greatly advanced the capability of a besieging army to take a city. In response, walls were reinforced to sustain bombardment by stone-throwers and various changes were introduced in the fortifications, especially in towers, which as a result could accommodate emplacements for artillery (on this see, in addition to the works listed above, J. Ober, *AJA* 91, 1987, 569-604). McNicoll, like other scholars, scrutinizes carefully the extant remains in order to determine precisely if, where and how artillery could operate from them. More often than not his analysis and conclusions are persuasive. Quite impressive, too, is his showing that in the period 322-303 B.C.E. the attackers were usually successful in conducting sieges, despite the much-publicized failure of Demetrius I in the siege of Rhodes (pp. 46-7). Without trying to minimize the importance of artillery in siege warfare, I cannot concur with his statement that this success was achieved almost exclusively thanks to the use of artillery, which was employed 'as the chief or even the sole means of battering down walls'. He adduces two texts to support his claim; neither of them is convincing: Diod. Sic. 21.4.1 does not show that the stone-thrower was more effective than digging through in demolishing the building/tower

on this occasion, the capture of Croton by Agathocles. Indeed, the stone-thrower may have done no more than give covering fire for those who were engaged in the digging. As for the other text, Diod. Sic. 21.8.1, there is nothing in it concerning battering down walls by stone-throwers; possibly it merely means that these engines gave covering fire to the attackers. McNicoll also refers (p. 5) to three passages of Philo (*Poliokretika* A27, 29 and 82), in which he indicates that walls and towers could be brought down or severely damaged by stone-throwers. But Philo also indicates that the destructive potential of the engines could be neutralized by proper construction of the fortifications, and, again, it is the combination of bombardment and sap that endangers the city walls.

However, my main argument is that by concentrating on artillery, and McNicoll is not alone in doing so,[2] some important aspects of siege warfare, affected by political and other developments that had taken place since the late fifth century, are underestimated or neglected. That traditional Greek siegecraft was generally ineffective and did not make progress, relying usually on blockade or stratagems rather than on assault (see, e.g. Plut. *Per.* 27, and the comprehensive accounts of Garlan 1974, 105-47; Kern 1999, 99-134), has mainly to do with general political and social conditions. In the world of the classical polis, when the pitched battle, fought almost ritually by mutual consent, was the accepted norm, if diplomacy failed, for deciding political differences or clash of material interests between poleis (see, e.g., Polyb. 13.3.2-6, and the good account of the nature of hoplite warfare by S. Mitchell in A.B. Lloyd ed., *Battle in Antiquity*, London 1996, 87-105), there did not exist a real incentive to develop the techniques of poliorcetics for the rare occasions of sieges. The decision to defend oneself behind fortifications is generally taken when one side is overwhelmingly inferior to the other, an exceptional situation before the rise of the Athenian empire and the Peloponnesian war. The level of military technology, notably in siege warfare, was geared down to the prevailing ethical values (P.B. Kern, *War and Society* 6.2, 1988, 1-20). Contrast the oriental empires whose rulers had the resources and the drive to expand, and were determined to subdue the enemy, whether in a pitched battle or by siege. Because of various constraints, they preferred to capture cities by assault rather than by blockade, their troops were trained for this type of warfare, and they brought to perfection the traditional methods of poliorcetics (I. Eph'al, in H. Tadmor and M.

2 Cf. e.g., Ober, in V.D. Hanson ed., *Hoplites*, London 1991, 192: 'Artillery capable of smashing even well-built stone walls now (i.e., after the invention of the torsion catapult) became a major factor in assaults. This new weapon paved the way for the great siege successes of Alexander the Great and the Diadochi'.

Weinfeld eds., *History, Historiography and Interpretation*, Jerusalem 1983, 88-106; *idem*, *Siege and its Ancient Near Eastern Manifestations*, Jerusalem 1996, Hebrew).

Now, in the siege of Motya, the first time arrow-shooting catapults were used, quite effectively indeed, Dionysius I constructed a mole, wheeled towers and drawbridges, and also employed battering rams and scaling ladders; he also had to use a stratagem and, in the final assault, benefited considerably from superiority in manpower (Diod. Sic. 14.49-54; cf. Kern 1999, 178-83). In brief, all these factors and means contributed to the capture of the city. Philip II is sometimes credited with introducing profound changes in the art of siege; these were part of his general military reforms (G.L. Cawkwell, *Philip of Macedon*, London 1978, 150-65), and did not simply result from his probable, not certain, responsibility for the development of the torsion catapult (Marsden 1969, 58-60). His success in capturing Amphipolis, Pydna, Potidaea, Methone, Pherae, and the cities of Chalcidice, including Olynthus, was mainly due to diplomacy, intimidation and bribery, as well as ability to bring about treachery in the cities attacked. There is no mention of artillery and, apparently, his assault techniques were not particularly effective as yet (Diod. Sic. 16.8.21; 53-4). Only at the siege of Perinthus, in 340, are arrow-shooting catapults recorded, as well as huge siege-towers, battering rams, scaling ladders, and sapping works (Diod. Sic. 16.74-6). The use of stone-throwers is first recorded in the siege of Halicarnassus, but not in order to breach walls (Arr. *Anab.* 1.22.1). Diodorus says that in the siege of Tyre Alexander's stone-throwers rocked the walls with boulders on one occasion (17.45.2), but their contribution, in this particular respect, to the capture of the city fades in comparison with the other means and factors by which Alexander accomplished this project, his most famous siege (for a detailed analysis see P. Romane, *Ancient World* 16, 1987, 79-90). Mining played a leading role in toppling walls in the siege of Gaza (P. Romane, *Ancient World* 18, 1988, 21-30). At the sieges of Salamis and Rhodus, Demetrius I seems to have trusted mainly to battering rams and sapping works, although he also used stone-throwers to shake walls (Diod. Sic. 20.48.91-2.94). In sum, in addition to improved assault techniques and engines (stone-throwers only one of them), factors no less important in siege warfare — noticeable in the cases of Motya, Perinthus, Halicarnassus, Tyre, Gaza and all the sieges of the Successors — are superiority in military manpower, a high level of engineering, efficient logistics and organizational capabilities. Last but not least, it is rulers with ample financial resources, in control of professional armies, ambitious and determined to carry out by force, if necessary, their expansionist plans, who were so successful in

conducting siege warfare. The resemblance to the oriental empires is clear and telling.

McNicoll ascribes the fortifications examined in chapter 2 to the Hecatomnid rulers from Mausolus to Ada (from 376 to some time after 334), basing his dating on historical considerations, as well as on masonry and tactical features. He may well be right about any of the sites concerned, but the methodological problems of the dating need to be exposed. There is no epigraphic evidence to support his conclusions, nor are they based on the results of stratigraphical excavation, which he considers the only method by which 'each and every structure can be dated', 'the only sure way to obtain a fully accurate chronological sequence of Hellenistic fortifications' (pp. 1 and 2). Of the eleven sites examined, excavations have been held only at Alabanda (soundings) and Labraunda, without recovery of chronological findings concerning the defences (*ibid.*). The small dimensions of towers are taken as indicative of belonging to the period preceding the development of torsion artillery, namely, in the first two thirds of the fourth century. However, as Milner remarks (p. 45), these features might as well be construed to mean that the walls of Alinda and Alabanda were constructed by a local authority with limited resources in a later period. It is worth noting that in a recent examination of the fortifications of Caria and adjacent areas, L. Karlsson has suggested that those of Halicarnassus and Myndus were constructed by Mausolus, those at Alinda by Ada (cf. Lawrence 1979, 138-40), but he would date those of Alabanda and at Labraunda, and the majority of the other sites of the region, to the turbulent times of Antigonus I and his son Demetrius I. Karlsson, too, has to rely on historical context, masonry techniques and features of towers, and yet, in contrast to McNicoll, he expresses doubt about the usefulness of excavations for the dating of walls (*REA* 96, 1994, 141-53). The truth of the matter is that in the absence of firm inscriptional evidence, these are the only means of dating at our disposal, and quite often they do leave room for more than one option or a wide chronological span. Incidentally, McNicoll expresses reservations about the identification of Alexandria on Mt. Latmus, mentioned by Stephanus of Byzantium, with Alinda, which was suggested by Droysen and is followed by many modern scholars (most recently by S. Hornblower, *Mausolus*, Oxford 1982, 314 with n. 156). In a recent book, P.M. Fraser has suggested, without ruling out this possibility, identifying this Alexandria with Alabanda (*Cities of Alexander the Great*, Oxford 1996, 28 with n. 56, 33-4).

In contrast to small military structures, urban fortifications have more potentially diagnostic features and there is no problem in determining their overall purpose; these are the reasons McNicoll adduces for his decision to

concentrate on the latter rather than on the former, although he has not entirely ignored isolated forts and country fortifications in his study. A group of six small forts in northern Caria is discussed on the basis of their description by Paton and Myres (*JHS* 16, 1896, 188 ff.), for this is one of the rare cases when McNicoll could not study the fortifications by personal inspection. He suggests that they were constructed by Mausolus and, following Paton and Myres, that they served as watching- and signalling-stations, relay posts, strong points or garrison forts to control nearby roads and territory. However, another suggestion is that at least two of them were strongholds of bandits (pp. 41-2). Caution is indeed advised in studying such structures for their functions may be diverse and their precise nature is quite often obscure and difficult to define. Lawrence has a valuable chapter on country fortifications (1979, 159-97), and Milner offers a short, good survey of recent works dealing with them, noting different interpretations of the functions of certain forts (pp. 207-8). In contradistinction to the types already mentioned are the fortified camp and the barrier wall, whose primary function would seem to be to serve as a basis for an army on campaign. Still, the case of the 'Mainland Wall' at Iasus illustrates the uncertainties involved in determining the functions of this type of fortifications and especially the historical circumstances of a construction. Some earlier scholars regarded it as a city wall, and others were of the opinion that it was a camp. The latter view has gained more supporters in recent times, but Hornblower, while admitting that it is a puzzle, reckons that it may have been part of the defensive system of the city and would date it in the fourth century (*Mausolus*, 317-8 with notes). McNicoll interprets it as an army camp and ascribes it to Philip V's campaign in 201 B.C.E. (ch. 5, with full literature to which Milner has added references to recent studies), but the masonry styles, tower features and other characteristics of the fortifications, on which he depends heavily for the dating, would fit any time from about the third part of the fourth century onward. Following Winter (1971, 241-3; cf. Adam 1982, 93 n. 93), Ober dates it to the very late fourth century or the first quarter of the third century (Van de Maele and Fossey, 1992, 157; cf. the vacillation of Lawrence 1979, 184-7 and see also Winter in Leriche-Tréziny 1986, 25). In a recent re-examination of the available evidence and the various theories suggested, with consideration of the relationship between Iasus and its *chora*, C. Franco tends to ascribe the work to Ptolemaic or Seleucid rule, but advises withholding judgement because of insufficient information on the history of Caria (*REA* 96, 1994, 179-84). Thus, *sub iudice lis est*.

But should all structures with fortified features be military-type installations, part of a uniform state system? Hardly so. Milner rightly draws attention to the existence of a type of fortified manor house, or tower-farm, that is, a basically agricultural, privately-owned structure, in the Aegean islands and Lycia. Such structures originated in classical times and continued to be built in the Hellenistic through the Byzantine periods (p. 208, referring, *inter alia*, to M. Nowicka, *Les Maisons à tour dans le monde grec*, Warsaw 1975; A. Konecny, *REA* 96, 1994, 315-26). It is well to bear in mind that this type of tower-farm existed in other parts of the Hellenistic East and was not confined to Asia Minor, as was shown long ago by F. Preisigke in a study based on literary and papyrological evidence (*Hermes* 54, 1919, 423-32; cf. D. Sperber, *AJSR* 1, 1976, 59-61). Such fortified manor houses, tower-farms, or fortified farmsteads, as they are variously called, have been surveyed and recorded in Samaria, Judaea and Idumaea in the last three decades. At least some of them date from the second century B.C.E. and probably all of them were still occupied in the first century C.E.[3] Some of these have been extensively excavated, notably Horvat 'Eleq, located northeast of Caesarea on the southern slopes of Mt. Carmel; one can now benefit from the detailed study of what has been uncovered of this site in Y. Hirschfeld, *Ramat Hanadiv Excavations*, Jerusalem 2000. The famous Khirbet Qumran probably belongs in this type, which does not mean, however (*pace* Hirschfeld *JNES* 57, 1998, 161-89), that it could not serve as a centre of the sect responsible for the scrolls found in the nearby caves. Two points should be stressed. The agricultural functioning of some of these sites has been exposed only by extensive digging. This raises the question whether many of those fortified sites in the countryside which scholars have identified, on the basis of a survey and observation, not of excavations, as military installations of the state, are not in fact remains of fortified manors, tower-farms. Second, a comparative study of all such fortified structures as well as of those resembling them, wherever they are located, whether in Greece, the Aegean islands, Asia Minor or the Hellenistic East, is likely to yield instructive results.

The last point brings me to comment on one aspect which is missing not only from McNicoll's study, but also from Milner's final chapter, in spite of the useful references to the bearing of recent investigations upon various topics related to the subject of the book. One might expect that a study of Hellenistic fortifications, even if confined to the geographical space

---

[3] See S. Dar, *Landscape and Pattern: An Archaeological Survey of Samaria, 800 B.C. – 636 C.E.*, Oxford, BAR 308, 1986, 12-5, 217-23; I. Shatzman, *The Armies of the Hasmonaeans and Herod*, Tübingen 1991, 65-9; Y. Hirschfeld, *JNES* 57, 1998, 161-89.

indicated in the title, would include some discussion concerning the possible influence of oriental traditions on the fortifications constructed by Greeks and Macedonians in the east from the late fourth century onwards. Indeed, right at the beginning of the book one reads that the study of fortifications forms an integral part of Hellenistic history (p. 1), in a sense a reflection of Hellenistic civilization, but there is no follow-up to this profession in the matter of west/east masonry styles, strategic and tactical concepts, etc. The fortifications of Seleucia Pieria and Dura Europus — surrounded by oriental population and located far from the old centres of Greek civilization, unlike the cities of western and southern Asia Minor — could be compared to those of Jerusalem (constructed by a local dynasty) and serve as a suitable starting point for such a discussion. It is here, too, that the updating of the work is deficient. For example, McNicoll's study of one section of the fortifications of Jerusalem is excellent for its time, and thus there is much sense in his criticism of the analysis and conclusions of K. Kenyon concerning the southern fortifications of the First Wall (pp. 200-6). However, the very extensive excavations of many parts of Jerusalem in the last three decades or so have brought to light rich, varied and enormous amounts of new information (for an informative list of the excavations see H. Geva ed., *Ancient Jerusalem Revealed*, Jerusalem 1994, 325-30). Of the numerous new researches and publications only one is mentioned (p. 200, n. 86), that of A. Kloner on the Third Wall in *Levant* 18, 1986, 121-9. With the recovery of substantial new sections of this wall, including foundations of towers (V. Tzaferis *et alii*, in Geva ed., 1994, 287-92), there is no longer any good argument for connecting it with the Damascus Gate, as has been done as recently as in G.J. Wightman, *The Walls of Jerusalem*, Sydney 1993, 160-63 (not mentioned by Milner). More relevant to the subject at hand, the Hasmonaean phases are now better known along several sections of the First Wall, including the area of the Citadel (see, e.g., N. Avigad, *Discovering Jerusalem*, New York 1983, 64-79, and various papers in Geva 1994, 147-76), but there is no need to go into detail here.

We can return to developments in fortifications in the wake of the encounter of the Greeks and Macedonians with the oriental populations. In addition to the findings gained from the old and the more recent excavations in Jerusalem, this topic can now be studied with the help of excavations in several more cities, among them Marisa, excavated a century ago by F.G. Bliss and R.A.S. Macalister (for analysis see G. Horowitz, *PEQ* 112, 1980, 93-111), Samaria, which was excavated twice in the first half of the twentieth century (G.A. Reisner *et alii*, *Harvard Excavations at Samaria 1908 to 1910*, 1-2, Cambridge, Mass. 1924; J.W. Crowfoot *et alii*, *The Buildings at*

Samaria, Samaria-Sebaste Reports 1, London 1942), the city of the Samaritans on Mt. Gerizim (Y. Magen, in F. Manns and E. Alliata eds., *Early Christianity in Context: Monuments and Documents*, Jerusalem 1993, 91-147), Strato's Tower-Caesarea (K.G. Holum *et alii*, *King Herod's Dream. Caesarea on the Sea*, New York 1988; A. Raban, *Caesarea Maritima*, Leiden 1995 — but the identification of some of the findings as Hellenistic rather than Herodian is controversial), and Dora, which has been excavated annually for the last twenty years (yearly reports in *IEJ*; for the walls see E. Stern, *IEJ* 38, 1988, 7-14). The excavations at Dora are particularly instructive, for here have been uncovered fortifications in successive stages from the tenth century through the Persian period (fourth century) and on to the early Hellenistic period (first quarter of the third century): encircling walls, gates, and towers. For two good discussions of these see I. Sharon, 'Phoenician and Greek Ashlar Construction Techniques at Tell Dor', *BASOR* 267, 1987, 21-42; *idem*, 'The Fortifications of Dor and the Transition from the Israeli-Syrian Concept of Defence to the Greek Concept', *Qadmoniot* 95-96, 1991, 105-12 (Hebrew); relevant, too, is Y. Shiloh, *The Proto-Aeolic Capital and the Israelite Ashlar Masonry*, Jerusalem 1979. A few isolated forts are also to be taken into consideration, like the one at Sha'ar ha-'Amaqim (A. Segal and Y. Naor, in D.H. French and C.S. Lightfoot eds., *The Eastern Frontier of the Roman Empire*, Oxford, BAR 553, 1989, 21-35). A comparative study of all this material could yield illuminating results bearing upon the topics discussed by McNicoll.

My comments have mainly been intended to show that various problems, not all noted above, need further investigation, which can benefit from the accumulation of new evidence and fresh testing of accepted notions concerning Greek fortifications and siege warfare. In carrying out their researches, scholars will do well to consult McNicoll's work, in addition to earlier fundamental studies of these subjects, both on major issues and on points of detail. Of the many insightful observations and suggestions, briefly stated or argued at length, I give one example on a matter outside his field of research. He comments on Y. Yadin's dating of the earliest use of the ram in the ancient near east to the early second millennium: 'It must surely be much earlier' (p. 8 n. 63). And indeed, it is now known that the ram had been in use at Ebla as early as the mid-third millennium (P. Steinkeller, *Nouvelles Assyriologiques Brèves et Utilitaires,* 1987, no. 2; I thank I. Eph'al for the reference). One of the assets of the book are the ninety-six plates, fifty-three figures — drawn partly by McNicoll himself and partly by previous scholars, not a few with his emendations — and the fourteen very instructive tables (e.g., sally-ports and smaller doorways: types by site). Lucidly

presented and beautifully produced, it is friendly to the user — an advantage much appreciated these days.

***

One looks in vain for logistics in standard works on the Roman army, even in good comprehensive treatments, for instance in those of J. Kromayer and G. Veith, *Heerwesen und Kriegführung der Griechen und Römer*, Munich 1928), G. Webster, *The Roman Imperial Army*[2], London 1979, L. Keppie, *The Making of the Roman Army*, London 1984, and Y. Le Bohec, *L'Armée romaine sous le Haut-Empire*, Paris 1989: they ignore it completely, mention it in passing or indirectly or dispose of it in a brief notice. Other than in the dissertation, not easily accessible, of J.P. Adams, *Logistics of the Roman Imperial Army: Major Campaigns on the Eastern Front in the First Three Centuries A.D.*, Yale University 1976 and in the dissertation of Roth himself, *The Logistics of the Roman Army in the Jewish War*, Columbia University 1991, the subject has not been investigated comprehensively in any major publication in English. In German it is treated by A. Labisch, *Frumentum Commeatusque: Die Nahrungsmittelversorgung der Heere Caesars*, Meisenheim an Glan 1975, and recently there have appeared two further major studies of logistics or supply of food to the army, namely those of T.K. Kissel, *Untersuchungen zur Logistik des römischen Heeres in den Provinzen des griechischen Osten (27 v. Chr. – 235 n. Chr.)*, St. Katharinen 1995, and M. Junkelmann, *Panis Militaris: Die Ernährung des römischen Soldaten oder der Grundstoff der Macht*, Mainz 1997. There is also a number of good articles on some aspects of the supply system. Yet on the whole scholars remain disinclined to deal with this subject, presumably for two basic reasons. First, other subjects seem to be more attractive, especially strategy, tactics, command and fortifications. Secondly, in light of the apparent scarcity of relevant evidence, it may not be regarded as a promising subject for comprehensive, thorough research. Thus, although the importance of logistics to the capability of the army to perform its tasks is recognized by A.K. Goldsworthy who in an illuminating appendix on the subject in his admirable book, *The Roman Army at War 100 BC – AD 200*, Oxford 1996, 287-96, observes that 'There is not enough solid fact to attempt even confident conjecture concerning the Romans' system of supply in wartime'. Indeed, the difficulty in reconstructing the Roman supply system with no reliable statistics, which is what Goldsworthy underlines, is admitted by Roth, but that has not deterred him from carrying out this research. The results fully justify the

attempt, even though some topics are dealt with more successfully than others.

In his justly acclaimed book on the subject, *Supplying War: Logistics from Wallenstein to Patton,* Cambridge 1978, M. Van Creveld, following Jomini, defines logistics as 'the practical art of moving armies and keeping them supplied' (*ibid.* 2). Roth limits logistics in this study to 'the supply and transport of the Roman army's food, fodder and firewood'. He is fully aware that the Roman army transported a vast variety of other materials into the field, but claims that food, fodder and firewood constituted about ninety percent of the supply needs of an ancient army (pp. 2-3). Unfortunately Roth has misunderstood his authority for this datum (Van Creveld, 24), who in fact calculates that ninety percent of what men and horses consumed in the supply system established by Louvois, the famous secretary of war of Louis XIV, was procured locally and not brought up from the rear. Roth may still be close to the right proportion between those three basic items of supply and all the others (clothing, armour, edged weapons, missiles, medical supplies, etc.), but this omission should be borne in mind if one cares to check some of the arguments and calculations presented in the book.

Roth has cast his net wide to cull relevant information from literary, documentary and archaeological sources and has also exploited modeling and comparative data to good effect. One is really surprised by the rich and varied amount of information that he has been able to amass. He presents it systematically and conveniently in seven well-organized chapters, each one consisting of an introduction, several sections dealing with the topics appropriate to the subject of the chapter and a conclusion. The subjects studied are the following: Supply Needs and Rations; Packs, Trains and Servants; Forage, Requisition and Pillage; Supply Lines; Sources of Supply; The Administration of Logistics; Logistics in Roman Warfare. All told, the topics of the sections and sub-sections amount to close to one hundred, which is one way to gauge the systematic approach characteristic of the treatment of the main subjects. For instance, the chapter on supply lines consists of Republican supply lines, imperial supply lines, operational bases, winter quarters, tactical bases, storage, depots, the operation of supply lines (sea transport, river transport, overland transport: pack-animals, wagons, porters, cattle on the hoof), logistical infrastructure (roads, bridges, canals).

For the discussion of a topic, Roth uses data taken from sources scattered over the whole period he examines and, if necessary and instructive, from other periods as well. This is a legitimate method and it enables him to present the variety of ways and means the Romans applied or established to solve various problems of supply. Sometimes, however, it may be

questionable whether there is a regular, orderly system behind the measures observed; it may also blur the gradual development of a system. Roth is aware of this danger, but perhaps not sufficiently so. I take as an example his treatment of supply lines. By supply line, considered as 'the sign of a relatively sophisticated military', he means the continuous connection between an army and a supply source. To explain the latter, Roth follows Labisch in distinguishing between strategic, operational and tactical bases. The first is defined as the area, or areas, supporting a military force from outside the area of operations. An operational base is where supplies are gathered within the area of operations, and a tactical base denotes the site where they are stored close to the location of the army, sometimes even within the daily marching camp (p. 157). Having surveyed the evidence, Roth arrives at two conclusions: that 'the Roman army routinely used supply lines throughout the Middle and Late Republican periods' (p. 165); that Labisch's model, based on the study of Caesar's provisioning of food to his army, 'can be applied to the Roman army for the entire period covered by this book' (pp. 219-20). Basically correct, these two generalizations seem to simplify a rather more complex situation.

One may well agree with Roth that in conducting the First Punic War, the Roman authorities were goaded to develop some new methods or, rather, to improvise means to cope with provisioning problems, which they had not faced during the conquest of Italy. It is incorrect, however, to claim that by the beginning of the Second Punic War, there could be seen 'a routine movement of considerable quantities of provisions and other war-material' (p. 159). Even if contracts for army supplies were a long-standing institution, as suggested by E. Badian in *Publicans and Sinners*, Oxford 1972, 16-29 (contrast, however, P. Erdkamp, *Historia* 44, 1995, 168-91 — both referred to by Roth in this connection), this does not by itself establish a continuous connection between a supply basis, of whatever type, and the army. The juridical status and administrative apparatus of the *societates publicanorum* developed in stages during the Roman wars and conquests of the Middle and Late Republic periods (see C. Nicolet, in *Points de vue sur la fiscalité antique*, ed. H. van Effentre, Paris 1979, 69-95). As long as this process was not completed, there was much preliminary work to do and various obstacles to overcome, before the contractors could perform the undertaking. Roth, indeed, is hesitant to follow Badian on this matter, but his assertion that the Roman state did have 'the infrastructure necessary to draw supplies through taxation, purchase and contributions' (p. 231) is a disguised recognition of the complexity of the process by which the army was supplied. Besides, he does not pay enough attention to one basic handicap: the

absence of a standing administrative staff responsible for the provisioning of the army, whether directly or through the private sector (cf. Adams, *Logistics of the Roman Imperial Army*, 217-18). This is clearly shown by Roth himself in his discussion of the administration of logistics during the Middle and Late Republic periods (pp. 245-61), in which he actually deals with the senate's allocation of funds to holders of *imperium* (*ornatio provinciae*), its few known resolutions to purchase or requisition grain for the army and the ways these magistrates and pro-magistrates tried to cope with the management of logistics during their period of office (cf. Erdkamp 1995, esp. 178ff.). Incidentally, I find it curious that for his bold claim that the administration of supply was efficient from the third century onwards, Roth refers to Junkelmann (p. 245 with n. 4). The latter in fact highlights the haphazard character of the provisioning of the army; rather, it was improvisation and ended only under Augustus (pp. 83-5).

To take another aspect of supply lines, physical infrastructure. Efficient transportation of supplies depends, at least to some extent, on the availability and maintenance of roads, bridges and canals. That the Roman network of roads did not spring up in one night throughout Italy and the provinces is recognized by Roth, but in his short treatment of this topic there is no real, indeed any, appreciation of the gradual stages through which this network grew up (pp. 214-19). Thus, he states that by the end of the third century a network of roads had been constructed throughout Italy. Yet of the twenty Italian roads listed by T.P. Wiseman in *PBSR* 38, 1970, 122-52, esp. 140, eleven were constructed during the second century. As for the roads outside Italy, two examples illustrate the slow response of Rome to logistical needs: the Via Egnatia, the main artery from the Adriatic to the east, was constructed only about 130 B.C.E. (N.G.L. Hammond, *JRS* 64, 1974, 185-94), and the Via Domitia, from Narbo to Arelate (Wiseman, *loc.*. 137-8) in 121, that is, in both cases, following the major wars the Romans had conducted in those regions. Then there is the question of depots, that is, 'intermediary bases, connecting the strategic with the operational and the tactical base' (p. 187). Roth can cite only two instances of what might look like the employment of this type of installation during the Republic period. Hence we cannot know for sure whether, or to what extent, depots, intended to facilitate movement of provisions along a supply line, were employed.

The logistical difficulties the Roman government faced in the Second Punic War — attested not only at the early stages of the war, as admitted by Roth, but even later — bear witness to the inadequacy of the supply system at that time, and no wonder. Never before had so many legions been enlisted and never before had so many served in several different operational areas.

Roth seems to me to exaggerate in stating that 'a sophisticated logistical system had developed during the Second Punic War' (p. 161; the reference to C. Nicolet, *Tributum*, Bonn 1976, 69-79, does not help, for there is nothing on supply here, only on taxation and financing methods). At any rate, it is obvious that the logistical complexity in this war was of a different kind and order of magnitude from what was known at the outbreak of the war. In some years there were eight or even ten different, and independent, commands (A.J. Toynbee, *Hannibal's Legacy* 2, London 1965, 650-1). How the competing needs and demands of the commanders were met and co-ordinated is scarcely known, nor is this question dealt with by Roth. The wars in the east, the Balkans, Spain, Gaul, etc. during the second and first centuries occasioned new demands and experiences which, in their turn, arguably required modification and improvement of traditional methods of provisioning, perhaps innovations, too.

In sum, my contention is threefold. First, the adoption of a model in the case of supply lines tends somewhat to obscure the successive changes made in response to new situations and conditions during the long period covered in the book. Secondly, while the evidence available does indeed show that in some cases the senate passed resolutions to facilitate the supply of the army and that not a few commanders were aware of logistical problems and employed certain means and methods to provision their armies, the general impression one gets is that during the period of the Republic the state did not establish an officially organised logistical system. Rather, it was usually left to every commander to start afresh and to set up the logistical machinery he deemed appropriate in order to take care of his supply problems. Thirdly, without detailed information — reliable statistics, as Goldsworthy puts it — any attempt to assess the level of performance of Roman commanders in respect of logistics is, generally speaking, a matter of conjecture or mere speculation.

Of particular interest is the chapter on Logistics in Roman Warfare which includes such topics as logistics in campaign planning, security of supply lines, foraging and supply lines, logistics and strategy, effects of logistics on tactics, logistics and siege warfare, and logistics and intelligence. As usual, each topic is discussed on the basis of a great number of examples. Here Roth has succeeded in determining and demonstrating the basic, one might say structural problems and dilemmas Roman commanders had to cope with in conducting wars, given the logistical means at their disposal. One question that comes to mind is whether or not the instances brought together here indicate that lessons were drawn from experience on a regular basis. Also, it would be illuminating to know whether or not there can be observed some

refinement or modification of the means applied to solving these problems. In spite of the rich instances, it seems that one cannot answer these questions with confidence.

Roth makes good use of scholarly works relevant, directly and indirectly, to his subject. Only in a very few cases does it seem that he has overlooked a valuable study. Thus in the discussion of wood he could have used with profit R. Meiggs, *Trees and Timber in the Ancient Mediterranean World*, Oxford 1982, especially the chapter on Timber for Armies. Consultation of L. de Ligt, *Fairs and Markets in the Roman Empire*, Amsterdam 1993, might have helped the rather brief consideration of the role of markets in supplying the army (p. 100). In the examination of taxation (in kind or in money; the methods of collection) one misses the relevant studies of P.A. Brunt, *Roman Imperial Themes*, Oxford 1988, chs. 15 and 17 (with the addenda) and R. Duncan-Jones, *Structure and Scale in the Roman Economy*, Cambridge 1990, chs. 2 and 12. In one case, the criticism of an accepted opinion is to some extent flawed. Roth contests the view of historians about the overland distance ancient armies could be supplied: not 60 miles but up to 200 miles (pp. 198-200). Three comments are apposite. First, the other historians' views are not presented accurately. Thus D. Engels in *Alexander the Great and the Logistics of the Macedonian Army*, Berkeley - Los Angeles 1978, 121 speaks about *effective supply* (my italics), and M. van Creveld, *Supplying War*, 46, does not mention distance and only deals with the difficulties encountered in feeding horses in a great campaign, that of Austerlitz. Secondly, some of the instances adduced do not bear out the claim and in two Roth is mistaken: the river Adrastus reached by the consul Q. Marcius Philippus in 169 B.C.E. was probably about 100 km. from a supposed logistical base in Thessaly, say Larissa; the consul was forced to retreat because the further he advanced from Thessaly the more he suffered from supply difficulties (Liv. 44.7.4-7; see N.G.L. Hammond, *History of Macedonia* 1, Oxford 1972, 129 with the map on 124). In 71 B.C.E. Lucullus was besieging Cabeira, not Cyzicus (App. *Mith.* 79-81), that is, not over 200 but less than 100 miles from Cappadocia. Thirdly, though under constraint or exceptional circumstances, for instance the crossing of the barren and almost waterless land of northern Sinai, ancient armies were indeed capable of making a very long journey, provided logistical measures were taken in advance. This is known and often taken into consideration by historians.

The merits of this book far outweigh my few points of criticism. Roth's is a major contribution to the study of an important aspect of the functioning of the Roman army. Scholars will find it a convenient and valuable guide to

the subject thanks to the copious documentation, full treatment, thoughtful observations and clear, well-organized exposition of the evidence. Given the many lacunae and the ambiguity of part of the available information, debate and disagreement are bound to arise, as some of my comments show. This of course does not detract in the least from the usefulness of the book; very detailed indices, five tables and nine plates add much to this usefulness.

The Hebrew University of Jerusalem