

introduction and a succinct list of further reading, while basic orientation is provided in the form of nice crisp maps, a chronology of events, and lists of important political and religious officials. At the end of the book is a useful guide to late antique resources on the Web: M. is plainly sensitive to the modern student's preference for surfing over reading.

In terms of the material presented, M. deserves high commendation for its variety and interest. The extension of the geographical horizons of the world of late antiquity to include Sassanid Persia and early Islamic Arabia will challenge western students to get their imaginations round Zoroastrian creeds and Quranic Suras. That said, however, the book did occasion some disappointments. In terms of the character of the sources cited, the overwhelming majority is culled from literary sources. There are some inscriptions, but on the whole I wondered if epigraphic material could have been exploited more thoroughly to illuminate such topics as city life and the social integration of the Church into the habits of élite patronage. Indeed, the selection might have been even bolder: as the second volume of Beard, North, and Price's *Religions of Rome* (Cambridge, 1998) showed, archaeological and iconographic material can be successfully included in a sourcebook. Perhaps it may seem unfair to criticize a book for what it does not include, so let me conclude with some remarks on the actual contents. Even if many of us will put aside our misgivings about getting students to read selected extracts rather than whole texts, I suspect that we would prefer those extracts to be as complete as possible. Seeing the preamble to Diocletian's Price Edict emasculated of the names of the emperors and their various titles (pp. 61–3) means that students are denied appreciation of an essential part of the document's rhetoric. In addition, the absence of any thorough discussion of the nature of the sources cited (elucidating their generic concerns and rhetorical agendas) may further reduce students' abilities to use them sensitively. Of course, these deficiencies are not unique to M., but are an affliction more generally of sourcebooks as a pedagogic genre, and they will doubtless be compensated for by teachers using the book in class. For all my misgivings, I do hope they will, because M. has presented students with an astonishing array of material, and for that we must be grateful.

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FEEDING AN ARMY

P. ERDKAMP: *Hunger and the Sword: Warfare and Food Supply in Roman Republican Wars (264–30 B.C.)*. Pp. 324. Amsterdam: J. C. Gieben, 1998. Cased, Hfl. 145. ISBN: 90-5063-608-X.

J. P. ROTH: *The Logistics of the Roman Army at War (264 BC–AD 235)*. Pp. xxi + 399, 9 figs. Leiden, etc.: Brill, 1999. Cased, \$123.50. ISBN: 90-04-11271-5.

Without a system of supply and re-supply, no army can function in the field, large-scale or long-distance campaigns are impossible, and an army cannot even maintain its existence, let alone conquer and maintain an empire. The Romans, successful at all these things, and so generally well organized (at least in many aspects and for much of the time), must have had a sophisticated logistical organization. Despite the importance of supply and logistics, however, books on the topics have been few and far between, and one of the most valuable works until now has been

D. W. Engels's *Alexander the Great and the Logistics of the Macedonian Army* (Berkeley, etc., 1978), though this is not without its problems. Lack of evidence is cited by most historians who have dodged the issue in their books on the Roman army or on Roman warfare. Sallust, for example, may have organized the logistical support for Caesar's African campaign, but there is no sign of his interest in the subject in his historical writings; and indeed why should there be, when a pitched battle or bloody siege was so much more fun? But both Roth and Erdkamp have proved everyone wrong, and produced two fascinating and meticulously researched studies of Roman logistics packed full of evidence, largely literary.

The virtually simultaneous publication has led to a fair amount of repetition of information, but this is understandable since neither author had access to the other's work. There is also, however, a fair amount of repetition within each volume. In his chapters on 'Supply Lines' and 'Logistics in Roman Warfare', R. repeats examples and information that have occurred earlier; E.'s chapter on 'The Means of Acquisition' begins and ends with essentially the same material and arguments. They do, however, generally agree that the introduction of a system of supply was begun as a result of Roman dabbling overseas, particularly in Sicily in the First Punic War. Gradually Rome developed sophisticated supply systems, involving fortified ports and towns along supply routes, and supply bases where these were not available. The significance of rivers and roads in the transport of supplies is also fully discussed by both authors, along with the influence of supplies, location of supply routes, and the availability of forage and supplies, on the course of campaigns. The course and timing of ancient campaigns was dictated by a number of factors, and both authors stress the huge impact that logistics and supplies could have, as illustrated in the Dyrrachium and Pharsalus campaigns of the Civil War. E. provides a particularly valuable case study of Hannibal's occupation of Southern Italy, which makes a major contribution not only to the study of logistics but also to the course of the Second Punic War and the economy of the Italian peninsula.

Both begin, sensibly enough, with a discussion of the nutritional requirements of armies, R. arguing for a recommended daily allowance for the Roman soldier of 3,000 calories, 20% lower than figures used by some previous historians, including Engels. E.'s less precise discussion more or less agrees, the significance, of course, being that the logistical problem was not quite so great if you did not have to carry quite so much food with you (and Roman armies, unlike the early modern armies which both use as comparisons, did not have to deal with the large amounts of ammunition that later compounded the transport problem). The Roman soldier received about two *sextarii* of grain a day (four *modii* every thirty-two days) according to both historians; for E., it is two military drinking cups of grain a day, though this does rely on the assumption that there was a standard size for a Roman military drinking cup. R., however, argues that the variable strength of the Republican legion 'would have led to logistical problems' (p. 20) and that the legion was reorganized under Augustus with the purpose that every subunit, from cohort to *contubernium*, could be supplied by a whole number of *modii* (one *modius* per day for a *contubernium* to 600 for a 'standard' legion). I have two difficulties with this explanation: would an army be organized primarily on the basis of how easy it was to calculate and measure out the necessary grain rations, or on the optimal organization for its military and tactical duties? And, is there such a thing as a 'standard' legion anyway? All the evidence suggests that whatever the ideal or 'paper' strength of any unit in the Roman army might have been, reality was very different. Pseudo-Hyginus in his *De metatione castrorum* details the amount of space for camping that every conceivable type of unit would require, but he also explains how

much space each individual soldier required, because units were as likely to be over- or under-strength as the 'right' size.

Supplies might be obtained through tribute, local requisitions, foraging, and pillaging; the last three would be carefully controlled (you do not over-do them in allied territory, as many ancient military writers advise). Given the vulnerability of detached groups of soldiers, foraging and pillaging parties might be large and organized; and here our literary sources do provide us with plenty of information: as E. notes, foraging and plundering was a much more promising subject for historians because of the opportunity for sudden attacks and the resultant dramas. E. argues that the state took principal responsibility for both obtaining and delivering supplies to armies, but he perhaps underplays the important rôle of the *publicani* that Badian suggested. The movement of supplies from supply bases to the army, often by means of a 'shuttle system', and the need to carry supplies with the army itself (how many days' of food might accompany the army is a matter that will probably never be resolved) greatly increased the size of the army. Though there is no doubt that Roman soldiers did carry a considerable weight of equipment and food, the bulk of the supplies would have been carried by wagon and pack animal, which would have needed attendants, and they and other slaves, whether privately owned or belonging to the army, would have needed feeding too. Though a 'good' general might cut down on these from time to time by kicking them out of camp, such supernumeraries might swell the size of the army by 20% (E.) to 25% (R.), though that is not to say they were entirely 'non-combatants'.

E. sees no Roman officer detailed with specific responsibility for the supply of an army and its logistical arrangements, arguing that instead rôles would be allocated as necessary. Though the quaestor's financial responsibilities may have made him a likely candidate for such a job (as R. suggests), other tasks, such as commanding detachments or even legions, were arranged on an *ad hoc* basis in the Republic, and E. is surely right in seeing this informal system working for supplies as well as command. A more fixed hierarchy of logistical responsibilities may have been established during the Principate. As R. admits, the problems of evidence make it hard to understand exactly what developments did take place and how a hierarchy in supply and logistical arrangements worked in the Empire, but the state now had to supply permanent garrisons throughout the empire as well as armies on campaign.

The impact of war and demands of military food supply on civilian populations is the topic of the second half of E.'s volume. He argues persuasively that it was easier to destroy standing crops through trampling (or by fire in drier climates) than Hanson and others have previously thought, as long as the pillaging is done at the right time before harvest, and thus that devastating crops was an important strategy in war that many recent writers have understated. He points out that war would have hit the rural population very unevenly. He plays down the impact of war as a factor in depopulation compared with epidemics and starvation (though presumably the latter could result from requisitioning and the destruction of crops in time of war), and argues (not entirely convincingly) that the Second Punic War did not cause the long-term economic devastation that Toynbee and many other historians have seen. R. deals with the impact of war on civilian populations only cursorily, but unlike E. he does not concentrate just on food; water is as vital an ingredient as food, and R. stresses its importance not just for drinking purposes, but also for the transport of armies and supplies inland. As with food, the availability of water might have a major impact on the timing and the route of campaigns, and the size of armies.

Both works are comprehensive studies of the subject; E. provides a clear discussion

of the impact and the demands of war on communities, whereas R. traces the development of logistics through to the existence of a largely static but 'professional' army. R. is easier to read and use because of both the quality of the text and the presence of an index. It is irritating in the extreme, and extraordinary given even the (albeit limited) indexing capabilities of word-processors these days, that an index-less book could have been produced, which makes E.'s text 'user-hostile'. Both lack maps and plans which could have saved a lot of rifling through atlases, and some of E.'s tables need labels and clarification. Nonetheless, together these works make a major contribution to the study of Roman warfare and the development of military institutions, and both are to be warmly congratulated for producing so successfully something which many were saying only a couple of years ago could not be done.

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DEATH BEFORE BODY-BAGS

D. G. KYLE: *Spectacles of Death in Ancient Rome*. Pp. xii + 288, 5 figs, 2 maps. London and New York: Routledge, 1998. Cased, £45. ISBN: 0-415-09678-2 (0-415-24842-6 pbk).

'But what did they do with all those bodies?' From this pragmatic question, posed by an undergraduate in response to a lecture on Roman gladiatorial spectacles, D. G. Kyle embarked on the far-ranging investigation that led to the present book. Addressed to a broad readership, K.'s study is avowedly 'not theory-driven or hermeneutically adventuresome' and tries 'not to stray too far from the evidence' (p. xi), but it is generous in adducing parallels from other cultures. (Those from the new world, however, are not always pertinent: a fascinating digression on public killing among the Maya, Aztec, and Amerindians [pp. 135–40], for example, highlights the differences rather than the similarities between Roman practices and those of the new world, which featured cannibalism and formal evisceration. Ethnologists will enjoy the culinary ramifications of Texas bear hunts, rattlesnake infestations, and the production of 'prairie oysters' [p. 211 n. 98], but their historical bearing on Roman *venationes* is remote.) K.'s readable text (144 pages) is bolstered by substantial notes (127 pages), which supply ample documentation and copious (mostly uncritical) bibliography. The project is ambitious, encompassing topics as diverse as Roman festivals and penal law, food, and Christian persecutions, as well as the more narrow question of the disposal from the arena of human and animal corpses. How well does it succeed?

On the whole, well. K. focuses on the city of Rome from the early Republic to the reign of Constantine, reasoning that 'Rome was the model' for practices elsewhere and that 'ritual patterns were widespread' (p. 12). The extent to which this was true is more a matter of faith than of demonstrable fact, however, and one casualty of K.'s Romanocentric perspective is an appreciation of the significance of gladiatorial spectacles across the empire. Still, Rome was undoubtedly the greatest 'consumer' of gladiators—and, as K. rightly emphasizes, of the captives and convicts (*noxii*) whose public executions accounted for the greatest number of deaths in the Roman arena (p. 91).

Since much of the book presents synthesis rather than argument, it is a distinct virtue that K. is a well-informed and generally reliable guide. Sometimes the summary of broader historical developments is misleading (e.g. p. 98, on treason trials under