
The past twenty years have witnessed a significant revival of interest in Greek military architecture and siegecraft. The modern study of Greek fortifications received its initial impetus when F. G. Maier published his Griechische Mauerbauinschriften (Heidelberg, 1959–61). Subsequently, J. R. McCredie’s Fortified Military Camps in Attica (Princeton, 1966) defined a previously overlooked class of military structure. E. W. Marsden’s Greek and Roman Artillery (Oxford, 1969–71) solved many of the outstanding problems associated with the development of catapults and offered new solutions to the problem of the relationship between fortifications and artillery. In 1971, F. Winter’s survey, Greek Fortifications (Toronto, 1971) laid the groundwork for the analysis of the various components of a fortification. Thereafter, Y. Garlan published a major work on Greek siegecraft, Recherches de poliorcétique grecque (Paris, 1974), which suggested a relationship between fortifications and the practice of Greek warfare. Now A. W. Lawrence has come out with a book which synthesizes much of the recent work in the area and which offers new answers to many of the questions raised by earlier studies.

L.’s book is divided into five parts. Part 1 deals with the origins of the Greek style of fortification and with the changes in military technology which in L.’s view were most influential in the development of the various types of forts built by the Greeks. L. argues that the Greek fortification style was originally adapted from Near Eastern and Mycenaean exemplars and that the Greek style per se was not formulated until the late fifth or early fourth century. L.’s descriptions of Near Eastern forts are full and his reconstructions from artistic and archaeological material of several Mesopotamian fortified cities are reasonable. His theory that the Greeks integrated many Near Eastern elements into their own designs is generally convincing, although he perhaps leaves too little room for independent parallel development of some obvious features. L. considers the invention and refinement of the catapult as the most significant influence on Greek fortification practice after 400 B.C.

Part 2 is a translation with commentary of the Poliorketika of Philo of Byzantium. Although translations into German (by H. Diehls and E. Schramm in 1919) and French (by Garlan in 1974) of the Poliorketika exist, this is the first translation of the work into English. L.’s translation is accurate and concise. The commentary is limited to technical points dealing with architectural features and with the text of Philo. On the architectural side L. expands upon the more general commentary by Garlan; especially enlightening are L.’s explanations of what Philo meant by the “semicircular, double, and serrated” systems of wall design (1. 39–48). L. offers some new emendations of the very imperfect text of Philo; notable are his permissions to reprint a review in this section may be obtained only from the author.
insertion of ἦ at 1. 20 and his emendation of ἐν to ἐκ at 1. 21. His deletion of τὴν ἐλέπολον at 3. 64 is reasonable but not absolutely necessary. L. also considers some older emendations, accepting some and rejecting others, usually on good grounds. His full explanations of textual problems will be appreciated by all scholars who use the Poliorketika. In the light of the textual difficulties it is a pity that L. does not print a full Greek text of the Poliorketika; it is also unfortunate that L. has left untranslated some sections of the Poliorketika which do not bear directly on the architecture of fortifications. The omission is not grave in a book dealing specifically with fortifications, but students interested in the general subject of Greek warfare who do not have access to Garlan will regret the missing passages.

Part 3, in which L. classifies defensive structures according to plan and function, is in some ways the most interesting section of the book. L. differentiates among walled cities, forts at cities (acropoleis, garrison forts, perimeter strongpoints), partitioned and extended cities, and country fortifications (border forts, signal towers, private strongholds). His typology is workable and should become the model for future work in the area. L.'s conclusions on the reasons for partitioning cities by means of crosswalls are particularly illuminating, since the function of crosswalls is a problem that has long exercised specialists in the field.

Part 4 is concerned with builders' techniques. In this section L. draws on his expertise in Greek architecture to explain how various forts were actually constructed. The chapter describing wall footings and foundations is especially valuable. Some of the material in part 4 was covered by Winter, but L. offers a more comprehensive analysis of a number of techniques. L. also considers financial problems associated with wall building, specifically how financial constraints may have influenced building techniques; this subject has been largely ignored by previous scholarship.

In part 5 L. analyzes the individual components which made up a fortification: outworks, gates, walls, towers, and windows. Here L. retraces ground that was Winter's main concern, but L. offers new theories of the arrangements of individual forts and presents original explanations for the forms exhibited by various structural elements. One of L.'s more radical speculations involves the function of postern gates. L. concludes that posterns were provided primarily for the peacetime occupations of the local population; earlier theorists had maintained that posterns were used for the sorties which became a common response to investment during the fourth century. L.'s theory is interesting but not perhaps entirely convincing. As L. himself notes in another context, catapults could not be depressed below the horizontal (p. 185). If, as was usually the case, the city walls were located near the top of a fairly steep grade, the attackers would be out of danger from the defensive catapults once they had neared the walls. At this juncture sallies from postern might be the defenders' only recourse, a consideration which could not have escaped military architects.

The book includes a gazetteer of fortified sites with bibliography for each site. This is by far the most thorough list of fortified sites available and will be tremendously useful to anyone interested in Greek forts. The gazetteer appears complete for the major fortifications of Greece and the bibliographies are for the most part comprehensive. L. has missed an important article on the Attic fort he
calls Eleftherai (more commonly called Gyphtokastro) by L. Beschi\(^1\) and might have found the dissertation of C. Edmonson helpful for a number of sites in northwestern Attica.\(^2\) In addition to the gazetteer, considerable bibliographic material is contained in the notes; especially helpful is the list of individual towers on pages 444–45 which augments the list previously published by J. H. Young.\(^3\)

*Greek Aims* is an outstanding example of careful scholarship. The book benefits from L.'s wide knowledge of architecture and non-Greek fortifications. L.'s descriptions of sites are generally accurate and thorough. The number of sites visited by L. is truly remarkable and his accounts of unpublished and ill-published forts and walls are of great value. The precision with which L. records the details of sites he has visited is exemplary; he has taken the time and trouble to make accurate counts of towers and windows and to take measurements at a great many fortified sites. The difficulty of this task and the consequent importance of L.'s measurements will be appreciated by anyone who has hiked to inaccessible sites in Greece and Turkey. The book includes numerous illustrations and well-drawn site plans, along with a large selection of photographs, many showing sites well off the beaten path.

The book transcends the narrow subject of fortifications; for example, L. frequently delves into the problem of urban planning and development. His theories on this subject, based on scanty remains of usually unexcavated sites, must remain hypothetical, but his conclusions are always sensible and frequently brilliant. The book deserves to be consulted not only by specialists in the field of fortifications but by anyone interested in the growth and development of the Greek city.

*Greek Aims* is admirably free of typographical errors. The only obvious one I found was on page 169: a wall near Smyrna is described as 45 meters long and 66 meters thick; surely a decimal point has been omitted from the second number.

A few criticisms must, however, be raised. Foremost is the fact that the book does not seem to live up to its title. L. has indeed considered tactical aims in fortification but has ignored problems related to strategy and grand strategy. How, for example, did the Greek approach to city and territorial defense change over the centuries? This question was raised by Garlan, who outlines the general development of the Greek approach to defense from the early fifth century through the Hellenistic period. Garlan postulates that the Greek states originally depended on territorial defense but turned to more city-oriented systems after the Peloponnesian War. Garlan’s thesis is disputable in many of its particulars, and L.’s book offered an ideal forum to confront Garlan.\(^4\) It is therefore puzzling that L.

4. *Recherches de poliorcétique grecque*, pp. 20–86. I attempted to point out some of the failings of Garlan’s thesis, especially as regards the Athenian example, in my dissertation.
did not even concern himself with the question of defensive strategy or grand strategy. L.'s concentration on tactical matters led him to stress the importance of technological advances in the development of Greek fortifications, and he consequently neglected other major changes in Greek warfare (e.g., the increased use of mercenaries after the Peloponnesian War) which may have been just as important to the Greek approach to defense as was the invention of the catapult.

L. also tends to make generalizations without adducing supporting evidence. He contends, for example, that by about 400 B.C. siegecraft became more powerful than defense and remained superior through the Hellenistic period. In fact, there is much evidence (e.g., Philip's failures at Perinthos and Byzantium) to suggest that until the age of Alexander defenders behind strong walls could often hold off besieging armies.

L. also sometimes mentions theories without attributing them to their authors. A conspicuous example is his apparent acceptance of the theory formulated by G. B. Grundy and elaborated by A. W. Gomme that in the fifth century states were forced to meet invaders in the field in order to protect their crops and thus save themselves from starvation. This theory is based on a number of highly disputable postulates, but L. simply presents it in bare outline without reference to the more thorough arguments of Grundy and Gomme which might give the reader a basis for examining the assumptions on which the theory rests.

While L. has a superb grasp of the archaeological evidence, his handling of literary sources is sometimes less satisfactory. He is too willing to accept dubious reports by ancient authors if they support his arguments, as evidenced by his uncritical acceptance of the statement in Diodorus Siculus 14. 18 to the effect that the fortifications of Syracuse were built in two weeks by the labor of 60,000 workers (p. 117).

L. also tends to overemphasize the worth of historical arguments when proposing dates for fortifications. For example, he estimates that it would have taken “several thousand good soldiers” to defend the Iasus mainland wall and states that the wall must therefore have been held by “its full complement” of 40,000 men (p. 186). L. reviews the history of Iasus and concludes that the wall could only have been built by one of the great Hellenistic monarchs, probably one of the Seleucids during the third century. The dating may be correct, but the historical argument is debatable. L.'s reliance on historical arguments is in part an outgrowth of his distrust of dating by masonry style. Although masonry dating is admittedly dangerous, it should not be completely rejected in favor of equally speculative historical dating.

A major flaw in L.'s book is the frequent failure to cite the source of ancient evidence. Too often L. simply states that “an ancient account” or “an inscription” contains the material to prove his point. The reader is left to guess to what author or inscription L. is alluding. This tendency is particularly irritating since much of the ancient evidence pertaining to fortifications is found in fairly obscure sources. It is also regrettable that the book does not include a general index. The gazetteer of sites covers some of the material one would expect in a index but does not substitute for the omission. Indexes are of course costly to compile, but

in such an expensive book the absence of a general index is deplorable.

Besides these general criticisms, a number of specific errors and problems should be pointed out.

L. states that 402 B.C. was the last time a Greek army resorted to *epiteichismos*, the erection of an offensive fort in enemy lands (p. 175). Offensive forts were in fact used during the fourth century, for example, by the Athenians against the Aeginetans in 389 (Xen. *Hell.* 5. 1. 1), by Chabrias against the people of Hesiaeotis on Euboea in 387/386 (Diod. Sic. 15. 30. 5), and by the Spartan general Mnasippus against the Corcyraeans in 374 (Xen. *Hell.* 6. 2. 7).

L. comments that all examples of the erection of long walls from a city to its port fall within one generation (ca. 459–417), which ignores the complete rebuilding of the Megarian long walls to Nisaea in the 340s (Plut. *Phoc.* 15) and the long walls of Aigosthena which must be dated to the late fourth or early third century (pp. 155, 419).6

L. states that stone water spouts to drain walls are usually Hellenistic (p. 272), but two spouts are preserved in the wall at Rhamnous in northeastern Attica which L. himself dates, I think correctly, to the pre-catapult era (p. 131).

L. comments that isolated military towers are invariably hollow from the ground up (p. 190). This is not the case at a number of Attic military towers, for example, the tower on hill 532, the Plakoto tower, the Aigaleos tower, and a tower on Hymettus, all of which were solid at least part of the way up.7 The Limiko and Tsoukrati towers in northern Attica have solid-packed sections.8 It may also be noted that L. has not given enough attention to the arguments of Young on the nonmilitary nature of many of the towers on the Aegean islands.9

To contend as L. does that the Attic border fort at Oinoe was classified as a *phrourion* long before 431 B.C. and that the fort was used constantly by the Athenians in border wars before the Peloponnesian War is to state supposition as fact (p. 173); there is no way of determining how long before 431 Oinoe was fortified or what military purposes the site may have served before the Peloponnesian War.

L. believes (though he does not argue the case) that the fort now called Gyptokastro (or Eleftherai) in Attica was ancient Panakton (p. 174). The evidence of an ancient road recently discovered by E. Vanderpool suggests that Panakton should be associated with the circuit near the village of Kavasala (now renamed Prasinon).10 At any rate to speak of the fort at Panakton is a misnomer; it is more correct to follow the form adopted by ancient literary and epigraphic sources and refer to the fort of Panakton.11

L. dates the inner circuit at Rhamnous later than the outer circuit, arguing entirely from the ease with which the outer circuit could have been assaulted by catapults (p. 308). This dating sequence disregards the carefully reasoned arguments of J. Pouilloux, who demonstrates conclusively that the inner circuit was the earlier of the two.12 It is also somewhat

6. The early fourth-century date proposed by E. F. Benson, “Aegosthena,” *JHS* 15 (1895): 314–24, is clearly too early for the sophisticated building techniques. L. suggests that the walls were built by Demetrius Poliorcetes (pp. 388–89). Another possibility might be the Athenians in the 340s, during the period of rapprochement with Megara. The existence of long walls suggests that a state with considerable sea power was responsible for building the fort.

7. For the 532 tower, see Vanderpool, “Roads and Forts,” p. 238; for the Plakoto, Aigaleos, and Hymettus towers, see McCredie, *Fortified Military Camps*, pp. 72–74, 119.


12. *Recherches de poliorcétique grecque*, pp. 39–42, 59–60. Pouilloux (pp. 43–55) tentatively suggested that the outer circuit dated to the 350s. This date was accepted by C. W. J. Eliot, *AJA* 60 (rev. of La forteresse de Rhammonte by J. Pouilloux, 1956): 199–201, but appears too late to me. L.’s catapult
misleading for L. to state that the Attic garrisons at Rhamnous and Thorikos were segregated from the local populace (p. 172). While it is possible that the garrison troops were sequestered in inner fortifications at the two sites, there is no evidence which proves the matter one way or the other.

L. claims that the Attic tower at Mazi was a signal station (p. 189), overlooking both the fact that the tower was built at the foot of a low rise and the great external dimensions of the tower. Both its location and its size differentiate the Mazi tower from other Attic towers which were used for signaling; the Mazi tower was probably used primarily as a road control point.

L. accepts without comment that a Cyclopean wall, probably Mycenaean in date, across the Isthmus of Corinth was built for military purposes. This may be correct, but the nature of the surrounding terrain suggests the alternative theory that the wall was built to retain the slope.

L.'s description of the fort at Samiko is marred by his failure to notice that one tower (on the north wall) which he mentions as an integral part of the fort is not bonded to the wall, was built of masonry very different from that of the wall, and blocks a postern (pp. 207, 355). The tower must be a later addition.

Minor criticisms notwithstanding, L.'s book is an important contribution to the study of Greek fortifications and raises the study of Greek military architecture to a new level. *Greek Aims* will undoubtedly and deservedly become a standard work in the area; L. sets a model of scholarship which future students of Greek fortifications must strive to emulate.

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argument in conjunction with masonry style suggests that a date should be sought in the early fourth century. The inner circuit should probably be dated to the mid-fifth century, with repairs in the late fifth century; cf. Ober, "Athenian Reactions," p. 321 with n. 113.


Siegfried Melchinger has been active in German theatrical production and in dramatic criticism for some fifty years. Although he formally studied classical philology as well as German literature in the 1920s, he has come prominently to the attention of classicists only since 1974, when the same publisher produced his *Das Theater der Tragödie*,\(^1\) a stimulating book which studies the physical conditions of tragic production in the fifth-century theater of Dionysus, with emphasis on the development from a stage without background and with movement and confrontation on an east-west axis to (ca. 460) a stage with a background punctuated (potentially, at least) by a central opening and symmetrically arranged. The earlier book is a useful complement to the treatment of similar topics in O. Taplin's *The Stagecraft of Aeschylus* (Oxford, 1977).\(^2\) In the volumes now under

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1. In 1967 he wrote a popularizing book on Euripides for the German series Friedrichs Dramatiker des Weltheaters; the book is unavailable to me and has been very little cited in subsequent scholarship. M. himself does not refer to the earlier book; only in the case of the *Iphigencia in Tauris* does M. record that his chapter has appeared before in a slightly different form.