

THE TEXT OF THUCYDIDES IV 8.6 AND THE SOUTH CHANNEL AT PYLOS*

SCHOLARS have long praised the overall topographic accuracy of Thucydides' account of the campaign at Pylos (iv 3–6, 8–23, 26–41);¹ and among the numerous details mentioned, only two apparent inaccuracies have been identified, both involving measurements. One, an inaccurate estimate of the length of Sphakteria, has been previously explained as nothing more than a simple numeral corruption² and is, in any case, irrelevant for understanding the military narrative. But the other, the underestimated width of the southern harbour entrance, remains a serious error which implies a fundamental misconception of relevant local geography and has made the account of Spartan strategy incomprehensible. Furthermore, its impact on the question of Thucydides' investigative methodology has been considerable, since most commentators, thinking the information reliably transmitted, have concluded that Thucydides never visited Pylos and somehow accepted misinformation on this crucial point.³ However, close study of the passage suggests that a textual corruption, not Thucydides, is responsible for the present inaccuracy.

(iv 8.6 f.) ἡ γὰρ νῆσος ἡ Σφακτηρία καλουμένη τὸν τε λιμένα παρατείνουσα καὶ ἐγγυὸς ἐπικειμένη ἔχυρὸν ποιεῖ καὶ τοὺς ἔσπλους στενοὺς, τῇ μὲν δυοῖν νεοῖν διάπλου κατὰ τὸ τεῖχος ματῶν Ἀθηναίων καὶ τὴν Πύλον, τῇ δὲ πρὸς τὴν ἄλλην ἡπειρον ὀκτῶ ἢ ἐννέα. (7) ὑλώδης τε καὶ ἀτριβῆς πᾶσα ὑπ' ἐρημίας ἦν καὶ μέγεθος περὶ πέντε καὶ δέκα σταδίου μάλιστα. τοὺς μὲν οὖν ἔσπλους ταῖς ναυσὶν ἀντιπρώροις βύζην κλήσειν ἔμελλον . . .

'For the island that is called Sphakteria, extending along and lying close by the harbour, makes it safe and the entrances narrow, there being toward the fortification of the Athenians and Pylos a passage of two ships and in the direction of the other mainland a passage of eight or nine. The whole island was wooded and pathless from lack of habitation, and in length roughly fifteen stades. Now (the Spartans) intended to close off the entrances tightly by means of ships placed with their prows pointing outward.'

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The following studies are cited by author's name: R. M. Burrows, 'Pylos and Sphakteria' in *JHS* xvi (1896) 55–76; G. Busolt, *Griechische Geschichte*² (Gotha 1893–1904); E. Curtius and J. Kaupert, *Karten von Attika* (Berlin 1881–6); J. G. Frazer, *Pausanias's Description of Greece*² (London 1913); A. W. Gomme, *HCT* (Oxford 1945–70) i–iii (Gomme), iv (Dover); G. Grote, *A History of Greece* (new edn in 10 vols, London 1888); G. B. Grundy, 'An investigation of the topography of the region of Sphakteria and Pylos' in *JHS* xvi (1896) 1–54; W. M. Leake, *Travels in the Morea* (London 1830); J. S. Morrison and R. T. Williams, *Greek Oared Ships 900–322 B.C.* (Cambridge 1968); W. K. Pritchett, *Studies in Ancient Greek Topography* i–ii (Berkeley and Los Angeles 1965–9); J. Wilson and T. Beardsworth, 'Pylos 425 B.C.: the Spartan plan to block the entrances' in *CQ* n.s. xx (1970) 42–52.

¹ E.g. Leake i 415; Grote v 233 n. 2; Grundy 42–7; Pritchett i 29.

² The length of Sphakteria is c. 4.4 km (4800 yds); whereas the estimate in iv 8.6, 'about 15 stades', would be equivalent to only about 3 km (on the length of Thucydides' stade, cf. Appendix with n. 22). W. G. Clark, *Peloponnesus* (London 1858) 220, suggested a corruption

from κε' (25) to ιε' (15); and Burrows 76 added that, if Attic notation had been used, ΔΔΠ (25) could have been corrupted into ΔΠ (15). Gomme iii 443 stated: 'There is perhaps a MSS error here in the figure; but in view of the other mistake it is hardly proper to suggest it.' Pritchett i 21–2 (cf. *The Choiseul Marble* [Berkeley and Los Angeles 1970] 95–6) favours the emendation on the basis of the frequency of numeral corruptions in the MSS of Thucydides. The manner of recording numerals in ancient MSS is, however, disputed. The controversy in regard to Thucydides' text is discussed by P. Deane, *Thucydides' Dates 465–413 B.C.* (Toronto 1972) 22–7. E. G. Turner, *Greek Manuscripts of the Ancient World* (Oxford 1971) 18, suspects that numerals were written out in full in fair copies of literary works rather than given in numeral notation. Even if the present conjectures prove to be inapplicable, the measurement is nevertheless so far out of line with other linear measurements in Thucydides (cf. Appendix) as to make the suspicion of corruption remain great.

³ From Leake i 415–16 onward, this has been the *opinio communis*: e.g. Grundy 13, 21 (but later reversed in *Thucydides and the History of His Age* ii [Oxford 1948] 105); H. Awdry, 'Pylos and Sphakteria' in *JHS* xx (1900) 16–17; Frazer iii 460; B. W. Henderson, *The Great War between Athens and Sparta* (London 1927) 221; L. Pearson, 'Thucydides and the geographical tradition' in *CQ* xxxiii (1939) 49; Gomme iii 484; Wilson and Beardsworth 51–2; D. Kagan, *The Archidamian War* (Ithaca and London 1974) 225–7.

The problem arises from the description of the width of the South Channel between Sphacteria and the 'opposite mainland' as 'a passage of eight or nine (ships)'. *ὀκτὼ ἢ ἐννέα* is not specifically identified; but the present text leaves no alternative to understanding a repetition of *ναῦς* from the first part of the *τῆ μὲν . . . τῆ δὲ* construction (just as with *διάπλουν*). However, since the present width of the South Channel is about 1200 m (c. 1300 yds) versus c. 100 m (c. 110 yds) for the Sikia Channel, and since there is no evidence that the distance is significantly changed from antiquity (cf. Grundy 3), this expression greatly distorts the relative widths of the two harbour entrances, which differ by about 12 times (c. 100 m to 1200 m) and not four times (2 ships to 8 or 9).⁴

Emendation of the numbers might be seen as a method of escaping this difficulty; but apart from being arbitrary and unconvincing,⁵ it would not remove a basic metrological difficulty. Normally, Thucydides expresses distance in linear terms, whether in feet (3 times), cubits (once), plethra (twice), or stades (42 times) (cf. Appendix with n. 22). If we exclude estimates given by the number of days travelled,⁶ there are, aside from iv 8.6, only two instances where descriptive expressions have been substituted for linear measurements: vii 30.2 and i 93.5. The former simply describes a distance as *ἔξω τοξεύματος*, a standard expression in military narrative.⁷ In the latter example, the breadth of the Themistoclean wall at the Peiraeus is characterized as wide enough for two wagons to pass while driving along the top. The characterization of the Sikia Channel as a 'passage of two ships' uses the same type of image, describing a given distance in terms of the space for two vehicles to pass or proceed abreast, and belongs to a fairly common group of graphic measurements of this type.⁸ Furthermore, it appears to represent a reasonable (or at least consistent) characterization of the true width involved, since the description of c. 100 m (110 yds) as a 'passage of two ships' agrees with a statement elsewhere (vii 38.3) that two plethra (c. 50 to 60 m, or 60 to 70 yds; cf. n. 22) was adequate space for one ship.⁹

In contrast, the graphic expression characterizing the South Channel is not only inaccurate but also *highly* unusual. A 'passage of eight or nine (ships)' violates the underlying principle of simplicity and easy visualization inherent in descriptive measurements based on the width of one or two vehicles. More importantly, it has no parallel elsewhere in Thucydides or in Herodotus,

⁴ This distortion is noted by Burrows 64 and Busolt iii 1089 n. 2. In presenting measurements, over-precise figures have been avoided, as even the most conscientious ancient and modern estimates necessarily contain a certain margin of error. For the harbour entrances at Pylos, the following estimates are given. Grundy 21: (Sikia Channel at the narrowest) 132 yds, and 3: (South Channel) c. 3/4 mile [c. 1300 yds]; Burrows 63-4: 500 ft [c. 150 yds] and 4000 ft [c. 1300 yds]; Frazer iii 460: 220 yds and over 1400 yds (but v 610: 132 yds for the Sikia Channel at the narrowest); Busolt iii 1089 n. 2: 120 m [c. 130 yds] and c. 1200 m [c. 1300 yds]; Gomme iii 443: 150 yds and 1400 yds; Pritchett i 22: 150 m [c. 160 yds] and 1300 m [c. 1400 yds]; Wilson and Beardsworth 46: 112 yds (no estimate of the South Channel). I have adopted the figure of c. 100 m (c. 110 yds) for the modern width of the Sikia Channel from Wilson and Beardsworth, because they claim (46) to have personally measured the Sikia Channel and had their measurements 'checked by independent observers'. Grundy (2) is the only topographer who claims to have surveyed the South Channel; and his map clearly shows that the modern width is c. 1200 m (1300 yds). Cf. in support the 1:100,000 Greece map, sheet M 5, Pilos.

⁵ Numeral emendation is condemned by Grote v 233 n. 2; Burrows 76; Pritchett i 22; Wilson and Beardsworth 45.

⁶ ii 97.1, 2; vi 1.2; vii 50.2.

⁷ E.g. Hdt. iv 139; for a thorough discussion of the approximate distance involved, cf. W. McLeod, 'The range of the ancient bow' in *Phoenix* xix (1965) 1-14. Similar graphic measures are occasionally employed in a

military context, e.g. Xen. *Hell.* iv 4.13 (the width of an army); 4.16 (a javelin throw).

⁸ Cf. Hdt. ii 158 and vii 24 (two ships); i 179 (one chariot); vii 176 (one wagon).

⁹ 50-60 m (55-65 yds or c. 165-200 ft) sailing space per ship appears at first glance to conflict with Hdt. ii 158, Necho's canal from the Red Sea to the Nile, and vii 24, Xerxes' canal across Athos, both said to be: *ὡς δύο τριήρας πλέειν ὁμοῦ ἐλαστρομέναις*. Traces of these canals range from 20-40 m (60-150 ft): cf. W. W. How and J. Wells, *A Commentary on Herodotus* (Oxford 1912) i 245 (Egypt), ii 135-6 (Athos). Yet not only could conditions be carefully controlled in a canal, but the builders would also restrict the width to be excavated to the least distance possible. Normal sea room would naturally be more generous to counteract wind, waves, currents, etc. Indeed, triremes proceeding with a *minimum* of c. 12 m (13 yds) of sea room on each side are said to fall foul of one another at Syracuse (vii 23.3). Since the space occupied by a trireme plus oars equalled c. 11 m (12 yds) (cf. Morrison and Williams 285 and pl. 25), this is equivalent to each ship unsuccessfully attempting to negotiate a passage of 12 m + 11 m + 12 m (32 m [35 yds]) or every two ships colliding in a passage totalling nearly 58 m (63 yds), and supports the credibility of the statements in vii 38.3 and iv 8.6. In addition, Diodorus Siculus reports (xiii 47.5) that the channel between Euboea and the mainland at Chalcis was narrowed during the Peloponnesian War, so that a passage for only one ship remained: *ὁ γὰρ διέκπλους ἀπελείφθη μιᾷ νηί*. Strabo (ix 2.2) quotes Ephorus (FGrH 70 F 119), who estimates this distance to be two plethra.

and only one rather distant parallel in Xenophon.¹⁰ None of these authors describes any body of water, or substantial distance of any kind, in the manner found in iv 8.6. For that reason, irrespective of the numbers involved, the basic form of the measurement is itself suspicious.

Distances of a kilometre or more are everywhere else estimated by Thucydides in stades (*cf.* Appendix). In addition, he sometimes uses the genitive plural of stades as a genitive of measure with a descriptive noun: the entrance of the Great Harbour at Syracuse is said to be a *στόμα ὀκτῶ σταδίων μάλιστα* (vii 59.3), the Athenian double wall at Syracuse is *ἑπτὰ μὲν ἢ ὀκτῶ σταδίων . . . τεῖχος* (vii 2.4), and the defensive wall at the Peiraeus *ἑξήκοντα μὲν σταδίων ὁ ἅπας περίβολος* (ii 13.7). These passages suggest the possibility that the word *σταδίων* may belong in the text of iv 8.6: i.e. (*διάπλου*) *ὀκτῶ ἢ ἑννέα <σταδίων>*. ii 13.7 in fact contains a close stylistic parallel for such an emendation. Compare:

(ii 13.7) *τὰ δὲ μακρὰ τεῖχη πρὸς τὸν Πειραιᾶ τεσσαράκοντα σταδίων*
 (iv 8.6) *τῆ δὲ πρὸς τὴν ἄλλην ἠπειρον ὀκτῶ ἢ ἑννέα <σταδίων>*

Moreover, a ‘passage of eight or nine (stades)’ produces an approximation of the distance across the South Channel well within the margin of error found elsewhere in Thucydides’ estimates of similar bodies of water.

*Thucydidean Estimates of Distances over Water*¹¹

Text	Measurement	Stades	Distance	‘Thuc. stade’
ii 86.3	Mouth of Crisaean Gulf	c. 7	1.8 km	c. 260 m
iv 8.6	South Channel, Pylos	8 or 9	1.2	130–50
vi 1.2	Strait of Messina	20	2.8	140
vii 59.3	Mouth of Great Harbour, Syracuse	8	1.2 (1.0)	150 (130)
viii 95.3	Oropus to Eretria	60	10.5	175

Having both ships and stades dependent upon *διάπλου* is surprising but justified by the special situation in iv 8.6. Although the South Channel is appropriately estimated in stades, the width of the Sikia Channel (c. 100 m or 110 yds) falls well short of even one stade. It would be normal practice to express two such greatly divergent widths in the units of measure appropriate to each: in this case, *plethra* and stades.¹² The combination of a descriptive measurement with a measurement expressed in stades can be best explained by the assumption that Thucydides preferred to vary the construction for stylistic effect and perhaps to add emphasis to the intended strategy of naval blockade.¹³

The objection might be raised that Thucydides specifically states that *both* of the harbour entrances were narrow: *καὶ τοὺς ἔσπλους στενοὺς*. The applicability of this characterization to the South Channel has been questioned;¹⁴ and yet the implication of the proposed emendation is that Thucydides was fully aware of the width involved and nevertheless wished to emphasize its narrowness. In fact, a body of water eight or nine stades wide constituted narrow space in terms of contemporary naval strategy. For example, the *ἔσπλους* (vii 22.2) of the Great Harbour at Syracuse, a *στόμα ὀκτῶ σταδίων μάλιστα* (vii 59.3), is twice referred to as narrow: *τοῦ μεγάλου λιμένος τὸ στόμα στενὸν* (vii 4.4) and *τοῦ στόματος οὐ μεγάλου ὄντος τοῦ λιμένος* (vii 36.6).

¹⁰ Xen. *Anab.* vii 8.14: *ὁ δὲ τοίχος ἦν ἐπ’ ὀκτῶ πλίνθων γήινων τὸ εὖρος*.

¹¹ See also the complete list of Thucydidean measurements in stades, Appendix, and the discussion of the length of Thucydides’ stade, n. 22. For the widths quoted for the Great Harbour entrance, *cf.* Dover iv 440: ‘the distance from the rocks at the southern tip of Ortygia to the little island (Scoglio Castelluccio) off the tip of Plemmyrion is 1.04 km, and to the western projection (C. Farruggia) of Plemmyrion 1.24 km’. Which distance Thucydides refers to is uncertain; but for calculations of sailing space (above n. 9) the lesser distance would be appropriate.

¹² Thucydides expresses no distance under three stades in stades (*cf.* Appendix) and gives one measurement of close to two stades as *δεκάπλεθρον* (vi 102.2). Combined

units of length are not uncommon (though nowhere given by Thuc.): e.g. Hdt. i 93 (*plethra/stades*); ii 124, 138 (*fathoms/stades*); iii 60 (*ft/stades*); iv 195 (*ft/fathoms*); IG ii² 1668.4–7 (*ft/plethra*).

¹³ Note also that in iv 8.6 alone Thucydides shifts from *ἔσπλους* to *διάπλους* and *κατὰ* to *πρὸς*. The best example of variation in expressing measurements is ii 13.7, where the nominative of stades is used contrastively with two examples of the genitive plural. On Thucydides’ passion for variations in expression, *cf.* J. Ros, *Die METABOLH (Variatio) als Stilprinzip des Thukydides* (Nijmegen 1938). The only other use of *τῆ μὲν . . . τῆ δέ* in Thucydides occurs at v 73.1.

¹⁴ E.g. Wilson and Beardsworth 45: ‘the south entrance is not *στενός*, though Thucydides says that it is’.

Similarly, the entrance to the Crisaean Gulf, estimated to be seven stades wide (and in fact wider), is called both *στενά* (ii 86.5, 90.1) and *στενοχωρία* (ii 89.8). On the basis of these explicit statements, there should be no doubt about the appropriateness of characterizing a 'passage of eight or nine (stades)' as *στενός* in iv 8.6.

The use of the adverb *βύζην* in iv 8.7 has also been cited as an indication that Thucydides could not have known the true width of the South Channel.¹⁵ Since this argument depends entirely on a special interpretation of *βύζην*, it should be noted that the exact meaning of *βύζην* is by no means certain. *βύζην* does not occur elsewhere in Thucydides; and neither contemporary and subsequent usage nor the explanations of the scholiasts and lexicographers indicate its precise sense with the verb *κλήσειν*.¹⁶ The only reliable evidence for defining *βύζην* comes from its commonly accepted etymological connection with *βυνέω* or *βύω* (verbal: *βυσ-*; 'stuffed full', 'dicht gedrängt', 'bourrer').¹⁷ If this is correct, *βύζην* ought to imply that the two harbour entrances *could* be blockaded in something like 'a stuffing-up or stopping-up way' (Wilson and Beardsworth 42). To satisfy this description, all that is required is a deployment of the sixty Spartan ships available (iv 8.2) in which the spacing between individual ships is substantially less (or tighter) than normal sailing space. The following hypothetical blockades may be offered.¹⁸

Total width of trireme = c. 11 m (12 yds)

Distance between triremes = (width of passage *minus* total width of ships) *divided by* no. of spaces between ships.

(A) Mainland	55 ships	Sphacteria	5 ships	Pylos
	c. 10.5 m (12 yds) apart		c. 7.5 m (8 yds)	
(B) Mainland	27 ships	Sphacteria	4 ships	Pylos
	26 ships		3 ships	
	(front row) c. 32 m (35 yds) apart		c. 11 m (12 yds)	

Both (A) and (B) provide spacing which is substantially less than normal minimum sailing space found elsewhere. (A), in fact, would leave hardly enough room for even a single trireme to pass without touching the oars of the flanking ships. If 45 Syracusan triremes, with at least 12 m (13 yds) of clear sailing space could fail to negotiate the entrance of the Great Harbour (c. 1040 m or 1100 yds) without falling foul of one another (vii 23.3), then the South Channel at Pylos could surely be considered 'stuffed full' or 'packed' when blockaded by 55 triremes as close as c. 10.5 m (12 yds) apart.

That such a blockade could have served as a real deterrent to Athenian naval attack is clear from the several occasions where Thucydides emphasizes that the naval tactics preferred by the Athenians required far greater room for manoeuvring than would be available if the Spartan fleet stationed itself, rams bristling, in the narrow harbour entrances at Pylos (cf. ii 86.5, 90.1; vii 36.4, 62.1).

¹⁵ E.g. Grundy 21–2; Burrows 74; Gomme iii 443–4.

¹⁶ LSJ translate *βύζην*: I. 'close pressed' or 'closely'; and II. '=*ἄθρόως*' ('all at once', 'collectively'). Stephanus gives *confertim* and *dense*. LSJ (II) is applied to the Hippocratic use of *βύζην* as a descriptive adverb for the flow of menstrual blood: *χωρέοντα βύζην* (*Nat. Mul.* i 5) and *βύζην ἀπιὸν κατὰ μήνη* (*Nat. Puer.* 15). (I) is proposed for the Thucydidean use; but the meaning is not clarified by reference to subsequent historical use, since all three examples (*Arr. Anab.* i 19.3; ii 20.8; *App. Pun.* xviii 123) obviously depend on Thucydides: e.g. *κατὰ τὸ στόμα τοῦ λυμένος ἤπερ τὸ στενωπῶτον ἦν ἀντιπρώρους βύζην τὰς τρίηρεις ὀρμίσαντες ἀποκεκλείεσαν* . . . (*Arr. Anab.* i 19.3). The *Scholia* connect *βύζην* with the verb *βύω* and equate it with *ἄθρόως*. Likewise, Hesychius and the *Suda*, s.v. *βύζην*, provide an impressive list of supposedly synonymous adverbs. Unfortunately, many have no classical attestation; and collectively they provide no more than a general impression of the specific meaning of *βύζην*. Thucydides may have chosen *βύζην* simply because he wanted to indicate something about the spac-

ing of the ships and had already modified *ναοῖν* with *ἀντιπρώρους*. In order, then, to avoid a second adjective, like *ἄθρόος* or *πυκνός*, cf. *αἱ τε νῆσοι πυκναί, καὶ ἀλλήλαις τῆς προσχώσεως* . . . *ξύνδεσμοι γίνονται*, . . . (ii 102.4), he simply modified the verb *κλήσειν* in a way which emphasized the unusually dense formation of triremes which he envisioned.

¹⁷ On the etymology of *βύζην*, cf. P. Chantraine, *Dictionnaire Étymologique de la Langue Grecque* i (Paris 1968) 202; H. Frisk, *Griechisches Etymologisches Wörterbuch* (Heidelberg 1960) 277; J. Pokorny, *Indogermanisches Etymologisches Wörterbuch* i (Bern and Munich 1959) 101.

¹⁸ It is almost certain that *ἀντιπρώρους* (iv 8.7) refers to an imagined formation in which the triremes have their prows facing the enemy. Gomme iii 443 only argued for triremes facing each other because he rejected the whole idea of a blockade of the South Channel and imagined that two triremes sunk lengthwise across the Sikia Channel could block that entrance. Wilson and Beardsworth 42 have shown the weakness of this view.

It should be admitted that there are no textual variants to support the proposed emendation of iv 8.6 and that the existing text is reflected in the *Scholia*. This means that if *σταδίων* was originally in the text, it must have dropped out during the early stages of transmission.¹⁹ But this is not in itself a serious problem. Gomme, for example, never hesitated in his *Commentary* to conjecture that individual words and phrases had dropped out of the text and entertained the possibility of omissions and lacunae no less than *fifty* times in Bk IV alone.²⁰ In addition, E. G. Turner and others have established that the text of Thucydides was, in fact, particularly susceptible to early corruption.²¹

In iv 8.6 the study of external evidence has revealed a serious (and surprising) inaccuracy. But given that the present characterization of the South Channel is not only wrong but also suspiciously lacking in parallels, while the proposed emendation has linguistic support, provides an acceptable measurement, and is even expected in view of the topography described, we have every reason to believe that iv 8.6 originally read *ὀκτώ ἢ ἐνέα <σταδίων>*. And indeed, if only the reasonable possibility of a textual corruption is accepted, it can no longer be safe to found sweeping generalizations about Thucydides' methods of research and the reliability of their product on the basis of this passage.

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APPENDIX: THE LENGTH OF THUCYDIDES' STADE²²

Text	Measurement	Stades	Distance ²³	'Thuc. stade'
i 63.2	Olynthus to Potidaea	c. 60	C 10.5 km	c. 175 m
ii 5.2	Plataea to Thebes	70	C 12.5	180
13.7	Athens: Phaleric wall	35	(5.6) ²⁴	(160)

¹⁹ If an Alexandrian date is correctly proposed for the authority of the *Scholia* (cf. O. Luschnat, *PW Suppl.* xii [1970] 1311–13), the corruption of iv 8.6 must have occurred before the first century B.C., since the *Scholia* give the gloss:

ὄν στομάτων τὸ μὲν ἐγγὺς αὐτῆς τῆς Πύλου στενὸν ἔστιν, ὥστε μάλιστα δύο τριήρεις ἅμα διαπλεῖν, τὸ δ' ἕτερον πλατύτερον, ὥστε ὀκτὼ δύνασθαι τριήρεις ἅμα διαπλεῖν^{1c2}.

²⁰ iv 1.4; 4.1; 9.1 (twice); 10.1; 20.2; 24.2, 4; 25.2, 9; 27.1; 28.4; 30.3; 36.3; 40.2; 46.1; 47.1; 48.3; 56.1; 60.1; 63.1, 2; 64.2, 3; 67.1; 73.4; 77.2; 78.6; 85.4, 6, 7; 87.4; 92.5; 93.2, 4; 94.1 (twice); 96.3; 108.6; 117.2; 118.4 (3 times), 11, 12, 14 (twice); 119.1; 125.1; 126.1, 2; 129.3.

²¹ E. G. Turner, 'Two Unrecognised Ptolemaic Papyri' in *JHS* lxxvi (1956) 95–8, has identified a third century B.C. fragment of Thucydides, in which the text 'is "wild" and erratic', and suspects that 'the text may have been manipulated in the interest of clarity'. Cf. A. Kleinlogel, *Geschichte des Thukydidestextes im Mittelalter* (Berlin 1965) 37–8 and Luschnat, *loc. cit.* (above n. 19). If this observation is correct, the loss of *σταδίων* may conceivably have been caused by editing. Even modern commentators have been disturbed by the preceding characterization of the harbour entrances as 'narrow'; and Alexandrian textual critics, faced with a contrast of two ships and eight or nine stades, both called narrow, could easily have 'corrected' the text in the belief that *σταδίων* was not originally intended. The result of topographic ignorance is clearly demonstrated by Diodorus Siculus (xii 61.3), who mentions only *one* entrance to the harbour.

²² The following table is based on the discussion of R. L. Scranton, 'The fortifications of Athens at the opening

of the Peloponnesian War' in *AJA* xlii (1938) 529–32, and Dover iv 467–8. Unfortunately, none of the measurements expressed by Thucydides in units less than stades can be compared with a modern estimate of the same length. As for distances measured in stades, 26 (apart from the South Channel) can be evaluated in comparison to modern estimates. If the extraordinary (and suspect) figure of a stade = c. 290 m for the length of Sphakteria is eliminated, the total range of inferred stade lengths equals c. 130–260 m, with 20 measurements between c. 150 and 200 m. In comparison, stades established from archaeological evidence range from 167 to 192 m: cf. W. B. Dinsmoor, *Atti del Settimo Congr. Intern. di Arch. Class.* i (1961) 355–68; O. Broneer, *Isthmia* i (Princeton 1971) 174–81; ii (1973) 63–4; S. G. Miller, *Hesp.* xlvii (1977) 25 (Nemea: c. 178 m). Although Thucydides no doubt had one particular stade length in mind, his informants could have been thinking in terms of any one of a number of divergent stades. Since he fails to mention regional standards for linear measurements (as he incidentally does for money) we cannot establish the exact length of his stade. The principle (virtually omnipresent in the literature) of selecting a stade length and then applying it as a test for Thucydides' measurements is therefore totally unreliable: cf., for example, H. Hultsch, *Griechische und Römische Metrologie*² (Berlin 1882) 69 with n. 1: Thuc.'s stade = 185 m; W. Judeich, *Topographie von Athen*² (Munich 1931) 131: = 164 m; Scranton *loc. cit.*: = 150 m.

²³ Unless noted, modern estimates of the distances referred to by Thucydides are (C) derived from Gomme or Dover (or their maps) or (M) from the 1:100,000 map of Greece. Less certain or variant modern estimates are included in parentheses.

²⁴ *CAH* v (1927) map opp. 165 (cf. Gomme i 213; ii 39–40).

ii	13.7	Athens: Guarded city wall	43	(6.4) ²⁵	(150)
	13.7	Athens: Long walls	40	C 6.4	160
	13.7	Athens: Peiraeus wall	60	(9.0) ²⁵	(150)
	13.7	Athens: Guarded Peiraeus wall	(30)	Unknown	—
	21.2	Athens to Acharnae area	60	9.0 ²⁶	150
	82.1	Anapus River to Stratus	80	Unknown	—
	86.3	Mouth of Crisaeon Gulf	7	M 1.8	260
iii	24.2	Plataea to Erythrae–Hysiae rd.	6 or 7	Unknown	—
	92.6	Heracleia to Thermopylae	40	(5.5) ²⁷	(140)
	92.6	Heracleia to the sea	20	(3.2) ²⁷	(160)
	97.2	Aegitium to the sea	80	Unknown	—
	105.1	Olpae to Amphilocheian Argos	25	(4.7) ²⁸	(190)
iv	3.2	Sparta to Pylos	400	70 ²⁹	175
	8.6	South Channel, Pylos	8 or 9	1.2 ³⁰	130–150
	8.6	Length of Sphacteria	(25) 15	C 4.4	(175) 290
	42.2	Seashore to Solygeia	12	(2.4) ³¹	(200)
	42.2	Seashore to Corinth	60	(11.5) ³¹	(190)
	42.2	Seashore to the Isthmus	20	Unknown	—
	45.1	Crommyon to Corinth	120	23 ³¹	190
	57.1	Cynuria to the sea	10	Unknown	—
	66.3	Long walls: Megara–Nisaea	8	C 1.8	225
	90.4	Delium to the battlefield	10	(2.0) ³²	(200)
	102.3	Eion to Amphipolis	25	C 4.0	160
	110.1	Temple of Dioscuri to Torone	3	Unknown	—
v	3.3	Brasidas' position to Torone	40	Unknown	—
vi	1.2	Strait of Messina	20	C 2.8	140
	97.1	Leon to Epipolae	6 or 7	Unknown	—
	97.3	Syracuse: meadow to enemy	25	(4.0) ³³	(160)
vii	2.4	Syracuse: Athn double wall	7 or 8	(1.5) ³³	(190–215)
	19.2	Deceleia to Athens	120	C 18	150
	29.3	Sanct. of Hermes to Mycalessus	16	Unknown	—
	34.8	Athn trophy to Erineus	20	Unknown	—
	59.3	Mouth of Gt Harbour, Syracuse	8	C 1.2 (1.0)	(130) 150
	78.4	Athn retreat: 1st day	40	Unknown	—
	78.4	Athn retreat: 2nd day	20	Unknown	—
	78.4	Athn retreat: march ahead	'many'	Unknown	—
	79.6	Athn retreat: 6th day	5 or 6	Unknown	—
	81.3	Athn retreat: separation of Athn army	50	Unknown	—
viii	67.2	Colonus to Athens	10	1.7 ³⁴	170
	95.3	Oropus to Eretria	60	C 10.5	175

²⁵ I. N. Travlos, *Πολεοδομική Ἐξέλιξις τῶν Ἀθηνῶν* (Athens 1960) 50.

²⁶ Curtius and Kaupert, 'Übersichtskarte von Attika'.

²⁷ Cf. map of C. Hignett, *Xerxes' Invasion of Greece* (Oxford 1963) 112. I assume Thucydides intends the entrance (West Gate) of the pass, when he estimates the distance to Thermopylae.

²⁸ N. G. L. Hammond, 'The campaigns in Amphilocheia during the Archidamian War' in *BSA* xxxvii (1936–7) 128–40, and Gomme ii 426–8 present different identifications of the ancient sites involved; but both produce stades of c. 190 m.

²⁹ The approximate distance by the direct route over the Langáda Pass: cf. Gomme iii 439; Pritchett i 18; Frazer iii 457, based on his belief (ii 13) in a Thucydidean stade of 177.42 m. Dover iv 468 unnecessarily estimates a longer route: 90 km (stade = c. 225 m).

³⁰ Cf. above n. 4.

³¹ R. S. Stroud, 'Thucydides and the Battle of Solygeia' in *Calif. Stud. Class. Ant.* iv (1971) 238–41. Two considerations modify the reliability of Stroud's figures: (1) the possibility that silting has altered the local coastline (cf. *Princeton Encyclopedia of Classical Sites* ed. R. Stillwell [Princeton 1976] 446); (2) computation of distances based on an assumed Thucydidean stade of 195 m (cf. 239 n. 30).

³² Pritchett ii 24–36.

³³ H. Drögemüller, *Syrakus* (Heidelberg 1969) 77–81 with map on 82. However, much doubt remains about Syracusan topography: cf. Dover's review of Drögemüller, *Phoenix* xxv (1971) 282–4 and of P. Green, *Armada from Athens* (New York 1970), *Phoenix* xxvii (1972) 297–300.

³⁴ Curtius and Kaupert pl. Ia.