

STRABO, POLYBIOS, AND THE STADE

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THIS ARTICLE CONCERNS the length of the stade as used by Greek geographical writers, in particular Polybios and Strabo. The length of the stade, the longest unit of Greek linear measurement, is one of the vexed issues of classical metrology, with stades of various lengths being attributed to geographical writers such as Eratosthenes, Polybios, Artemidoros, Poseidonios and Strabo respectively. While the question of the length of the geographical stade in itself is a metrological issue, it does have ramifications beyond those narrow bounds. Strabo, in his *Geography*, refers frequently to stade distances given earlier by Eratosthenes, Polybios, Artemidoros and Poseidonios, without betraying any awareness that the stades in question are of varying lengths. Are we then to deduce that Strabo was either a happy ignoramus, who simply did not know that these distances were based on variant stades,¹ or a careless scholar who realised the situation but brazenly did not care? One or other of these two views is implicit in the work of all scholars who adhere to the theory of different stades in use among the geographical writers on whom Strabo draws.² On the other

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I have made extensive use of the most recent (and, at the time of writing, still incomplete) edition of Strabo, the Budé edition: G. Aujac, F. Lasserre, and R. Baladié (eds.), *Strabon: Géographie. Vols 1-5, 7-9 Books 1-8, 10-12* (Paris 1966-89). Reference to individual volumes will be by editor's name and volume number.

The following works will be cited by author's name: J. P. Adams, "Polybios, Pliny and the Via Egnatia," in W. L. Adams and E. N. Borza (eds.), *Philip II, Alexander the Great and the Macedonian Heritage* (Washington 1982) 269-302; D. R. Dicks, *The Geographical Fragments of Hipparchus* (London 1960); W. B. Dinsmoor, *The Architecture of Ancient Greece*³ (London 1950, repr. New York 1973); A. M. Eckstein, "Notes on the Birth and Death of Polybios," *AJP* 113 (1992) 387-406; D. Engels, "The Length of Eratosthenes' Stade," *AJP* 106 (1985) 298-311; F. Hulthsch, *Griechische und römische Metrologie*² (Berlin 1882, repr. Graz 1971); C. F. Lehmann-Haupt, *RE* 3A.2 (Munich 1929) cols. 1930-63 s.v. "stadion"; P. Pédech, *La Méthode historique de Polybe* (Paris 1964); F. W. Walbank, *Historical Commentary on Polybios, Vols 1-3* (Oxford 1957-79); = *Historical Commentary*; *idem*, "Via illa nostra militaris: Some Thoughts on the Via Egnatia," in H. Heinen, K. Stroheker, and G. Walser (eds.), *Althistorische Studien Hermann Bengtson* (Wiesbaden 1983, *Historia Einzelschriften* 40) 131-147 = "The Via Egnatia".

¹A. Diller, "Geographical Latitudes in Eratosthenes, Hipparchus and Posidonius," *Klio* 27 (1934) 258-269: "... Strabo seems unaware that the stade was of various lengths..." (259, n. 1).

²It is implicit in the notes to the Budé edition, in which the editors provide conversions into kilometres of the stade distances mentioned in Strabo's text. In some volumes,

hand, is it not possible that all Greek geographical writers based their stade distances on the same stade and that Strabo's use of the distances worked out by his predecessors reflects this simple state of affairs?

Paradoxically, it is a comment by Strabo himself that has been used as evidence for a variant stade in the particular case of Polybios. Strabo's comment concerns the distance along the Via Egnatia, for which he cites disagreements between the figures given by Polybios and others. The passage in question is Strabo 7.7.4 C322. Typically, Strabo's citation of Polybios in this passage has been seized on as a "fragment" of the lost Book 34 of Polybios (it is given as fragment 34.12.2a-8 in Büttner-Wobst's edition³ of Polybios) and has then been considered out of its Strabonian context. It will be my argument that Strabo 7.7.4 C322 has been misinterpreted as a result and that the "Polybian stade" is a result of this misinterpretation. I will offer a reinterpretation of the passage which, taken in conjunction with recent scholarship on the stade length of other geographical writers, suggests that Strabo and earlier geographers, including Polybios, all used one and the same stade and that we can clear Strabo of charges of ignorance or indifference in his use of the stade distances of his predecessors.

In the scholarship on the subject of the various stade lengths supposed to have been used by Greek geographers, the length of a stade is expressed sometimes in English feet, sometimes in metres, or sometimes as a fraction of the Roman mile. For comparative purposes, I express all stade lengths in metres, and I round up to the nearest metre. The following list of stade lengths that have been attributed to individual geographers is not exhaustive but will serve to illustrate the confusion which has clouded the issue: "Eratosthenes' stade" has been given as 148/9, 158, 168, 178, and 185 metres;⁴ "Poseidonios' stade" as 148, 197, and 222 m;⁵ and the "Polybian stade" as 178 and 192 m.⁶ On the other hand, scholars have usually agreed in attributing a stade of 185 m⁷ to Artemidoros and to Strabo.

Some scholars have now moved towards the view that the stade of 185 m, with which Strabo and Artemidoros were familiar, was also the stade length

conversions are based on different stade lengths depending on whether the distance is derived, or believed to be derived, from Eratosthenes, Polybios, Artemidoros, or Poseidonios. See below, nn. 4-7.

³T. Büttner-Wobst (ed.), *Polybios' Histories. Vols 1-4* (Leipzig 1882-1905). The fragments of Book 34 are in vol. 4.

⁴For the scholarship on these stade lengths, see Engels and G. Aujac, *Strabon et la science de son temps* (Paris 1966) 176-179. In the Budé edition of Strabo, the stade of Eratosthenes is given as 157.5 and 158.7 m (Aujac 1[1].53 and 1[2].191-192).

⁵Dicks 151-152 (for the scholarship on 148 and 197 m); Aujac 1(2).192 (for 222 m).

⁶Pédech 536, n. 120 (for 177/178 m and a note on the scholarship for 192 m); Walbank, *Historical Commentary*, particularly 3.623-624 (for a Polybian stade of 178.5 m); Aujac 1(1).53, n. 1, 1(2).192 (for 177.7 m); Baladié 4.136, n. 2 (for 177.6 m).

⁷Aujac 1(1).53, n. 1, 1(2).192; Lasserre 2.16, n. 2; Baladié 4.136, n. 3.

used by Eratosthenes and Poseidonios.⁸ This fits in with Strabo's use, without reference to any variant stade length, of stade distances derived from both of these earlier writers. There remains only the problem of the Polybian stade: while the Polybian stade of 192 m has been rejected, the Polybian stade of 178 m remains.⁹ The source for the idea of this Polybian stade—Strabo 7.7.4 C322—needs to be looked at afresh. As a citation of Polybios by Strabo, it cannot be studied in isolation from other such citations. I, therefore, offer in Part 1 of this article a survey of the way in which Strabo generally uses Polybios as a source, particularly for stade distances—something which has not previously been taken into consideration when using Strabo 7.7.4 C322 as “evidence” for the Polybian stade. In the light of this survey, I will then in Part 2 of this article return for a more detailed look at Strabo 7.7.4 C322 itself. In Part 2 I also look at a related passage, Strabo 7 fragment 56 (= fr. 57 C331 in the editions of Strabo by Kramer and Meineke). Finally, in Part 3, I will finish with some remarks on a passage in the extant work of Polybios which has long perplexed Polybian scholars, Polybios 3.39.8.

PART 1: STRABO'S USE OF POLYBIOS AS A SOURCE

In Books 1–2 of the *Geography*, Strabo reviews some of the contributions to geography made by Eratosthenes, Hipparchos, Poseidonios, and Polybios. In his review of Polybios (2.4.1–8 C104–109) Strabo cites several of Polybios' stade distances—particularly for the western Mediterranean and the Adriatic sea. In the remainder of the seventeen-book *Geography*, Strabo continues to cite Polybios, often for his stade distances. Of course, some other stade distances reported by Strabo and not attributed to Polybios by name may nevertheless derive from him. Those distances do not concern us here, other than to note that in accordance with his general citation practice, those instances where Strabo does acknowledge Polybios are generally cases where either Strabo disagrees with Polybios' information or, while Strabo himself agrees with Polybios, his other sources do not.

Thus Strabo sometimes adopts Polybios' figures and sometimes rejects them. An example of Strabo adopting one of Polybios' stade estimates is 6.1.11 C261, where Strabo is describing Italy, starting from the north and

⁸For the definitive article on Eratosthenes' stade, see Engels 298–311; see also the earlier comments by Dicks (42–46) and in his review of vol. 1 of the Budé edition of Strabo in *CR* NS 21 (1971) 188–194. For the equation of Poseidonios' stade with Eratosthenes' 185 m stade, see Dicks 151–152; see also the comments of C. M. Taisbak, “Poseidonios Vindicated at All Costs?: Modern Scholarship versus the Stoic Earth Measurer,” *Centaurus* 17 (1974) 253–269.

⁹This is the view held, for example, by Walbank (*Historical Commentary* 1.70 and 373, and 3.623–624), Pédech (536, n. 120), and M. C. P. Schmidt, *De Polybii Geographia* (diss., Berlin 1875) 5–9.

working south, and has reached the strait between Italy and Sicily. For the next stretch of coastline (from the Strait to the Iapygian point), Strabo continues:

τὰ διάγραμμα δ' οὐκ εὐκρινῶς λέγεται· πλὴν ὡς γε ἐπὶ τὸ πολὺ σταδίους ἀπὸ Πορθμοῦ μέχρι Λακινίου Πολύβιος ἀποδίδωσι χιλίους καὶ τριακοσίους, ἐντεῦθεν δὲ καὶ διάγραμμα εἰς ἄκραν Ἰαπυγίαν ἑπτακοσίων. Str. 6.1.11 C261

The distances are not given in a clear way; except that Polybios gives 1300¹⁰ stades, at most,¹¹ from the Strait to Lakinion and a distance from there to the Iapygian point of 700 stades.

Strabo appears happy to relay Polybios' figures, with no mention of any use of a different stade. Indeed, Strabo singles out Polybios for the clarity of his figures.

Polybios himself is represented by Strabo as taking issue with some of the stade estimates given by his (Polybios') predecessors, in particular Eratosthenes and Dikaiarchos. In 2.4.1–4 C104–9, Strabo discusses some specific examples of Polybios' corrections of earlier figures. Polybios apparently thought that Dikaiarchos' figure for the Peloponnese to the Pillars (the mouth of the Mediterranean) was too low by more than a half, and gives his own revised estimate; he also corrects a series of Eratosthenes' estimates. According to Strabo, Polybios called the original estimates *λαοδογματικὰς*¹² *ἀποφάσεις*—"statements that follow popular opinion" (2.4.2)—yet there is never any suggestion by Strabo that Polybios' disagreement with his predecessors' figures might be based even partially on Polybios' use of a different stade from theirs. Indeed, the fact that Polybios drew heavily on his predecessors—if only to improve on them—suggests strongly that he used the same stade as they had done.

Strabo in turn takes issue with Polybios' correction of Dikaiarchos and some of his corrections of Eratosthenes. He states for example that Polybios' correction of Dikaiarchos' figure for the Peloponnese-Pillars is excessive (2.4.2). Strabo himself prefers a figure higher than Dikaiarchos' but lower than Polybios'. There is no suggestion that the figure preferred by Strabo should be understood as being based on a different stade from that used by Polybios. Indeed, Strabo goes out of his way to explain that his

¹⁰A correction for the number "2300" in the text (Lasserre 3.142, line 12). 1300 + 700 stades = 2000 stades for the distance from the Strait to the Iapygian point (presumably directly). This fits in with figures given earlier by Strabo and attributed to Polybios: 2500 stades for the Strait-Iapygian point by sea following the coast, and 3000 stades for the Strait-Iapygian point by land (Str. 5.1.3).

¹¹The Greek is ὡς γε ἐπὶ τὸ πολὺ. Lasserre (3.142, n. 2) suggests that the phrase means that Strabo is using Polybian stades. However, with numerals the phrase simply means "at most" (Liddell and Scott).

¹²The word *λαοδογματικὰς* here is reconstructed by reference to Str. 7.5.9 and 10.3.5.

dissatisfaction with Polybios' figure springs from his dissatisfaction with Polybios' faulty method of computation (2.4.3).

Strabo was not the only geographical writer to address the reliability of Polybios' stade estimates and corrections. Artemidoros and Poseidonios (both writing after Polybios and before Strabo) did so too. Strabo tells us so in 10.3.5 C465. He takes Polybios' criticism of his (Polybios') predecessors as reporters of *λαοδογματικὰς ἀποφάσεις* and turns it against him. Strabo makes the point that Poseidonios, Artemidoros, and others have all in turn improved upon Polybios' figures. Strabo makes no reference to any variant stade used by Polybios, although he does take the opportunity to make a heartfelt lament about the bad judgement or ignorance of his (Strabo's) sources.¹³

καὶ ἡμῖν οὖν συγγνώμη καὶ οὐ δυσχεραίνειν δεῖ, παρὰ τῶν τοιούτων μεταφέρουσι τὴν πολλὴν ἱστορίαν, ἐὰν τι παταίωμεν, ἀλλ' ἀγαπᾶν, ἐὰν τὰ πλείω τῶν εἰρημένων ἑτέροις ἄμεινον λέγωμεν, ἢ τὰ παραλειφθέντα κατ' ἄγνοιαν προστιθῶμεν. Str. 10.3.5 C465

Taking much of my information from such [*sc.* writers], I should be pardoned and am not to be blamed if I trip up, but rather congratulated if I improve upon most of what they said or if I add things omitted out of ignorance.

Strabo gives several specific examples of Artemidoros' dissatisfaction with Polybios' figures. In 8.8.5 C389, after citing Polybios for giving the distance from Cape Malea to the Ister as about 10,000 stades, Strabo tells us that "Artemidoros, with good reason, corrects this". Strabo then proceeds to list the distances given by Artemidoros relating to the individual legs of the journey. Although at this point the text is corrupt and requires reconstruction, what seems clear is that Artemidoros' figure for the distance from Malea to the Ister is considerably lower than Polybios'. The explanation given for Polybios' error is "that he does not measure the direct route but one that happens to be the route taken by some general or other". There is no suggestion of any part played by a different stade length.

Similarly, in 8.2.1 C335, Strabo cites Polybios' figure—4000 stades—for the perimeter of the Peloponnese and then cites Artemidoros for his addition of 400 stades. In view of the phraseology used, it sounds as if Artemidoros is to be imagined as citing Polybios but as stating that Polybios' estimate is too small. Artemidoros' addition cannot be explained as an adjustment to compensate for a supposed difference between stade lengths; it merely represents what Artemidoros considers to be a better estimate.

In these passages then, we have seen that Strabo addressed the question of the reliability or otherwise of Polybios' stade estimates; that Polybios himself had addressed the question of the reliability of Eratosthenes' and Dikaiarchos' stade estimates; that Artemidoros and Poseidonios had

¹³See Strabo's similar comments at 6.3.10 C285.

addressed the question of Polybios' stade estimates. Yet in none of these passages is there any indication to the reader that Polybios' figures are based on a stade of a different length from that used by Strabo himself, by Strabo's other sources or by Polybios' own sources.

Finally, there is one respect in which Polybios uses what Strabo perceives to be an inaccurate method of measurement. Polybios compares the size of the continents by their position in relation to the equinoctial and solstitial sunrises. Strabo decries Polybios' use of a variable standard (the direction of solstitial sunrises varies according to the parallel on which the observer is located):

πρὸς δὲ τὰ ἀμετάπλωτα οὐδεὶς κανόνσι καὶ μέτροις χρῆται τοῖς μεταπτώτοις οὐδὲ τοῖς κατ' ἄλλην καὶ ἄλλην σχέσιν λεγομένοις πρὸς τὰ καθ' αὐτὰ καὶ διάφορα. Str. 2.4.7 C108

With regard to what is fixed, no-one uses standards or units of measurement that can change; nor [sc. does one use] what is relative for what is absolute . . .

These would be unlikely words for Strabo to use if the stade that he and Polybios used were itself variable. Moreover, just prior to this passage, Strabo makes it clear that he would have preferred Polybios to use the traditional method of measuring distances, by σταδιασμοί ("reckoning by stades"). Strabo implies that "stade-reckoning" as done by geographers is not subject to any variation in the unit of measurement used, which would hardly make sense if Polybios used a different stade.

It is true that most stade distances used by Greek geographers were estimates. The margin of error—frequently as much as 25% and sometimes as high as 50%—involved in such estimates far outweighs the effect of slightly different stades. On the other hand, the inherent problem of the inaccuracy of measurements based on estimates, of which Greek geographers were surely aware, makes it all the more important that the unit on which they based their estimates should at least be standard.

Not all the stade distances used by geographers, however, were estimates. Some geographers—at least those like Polybios and Strabo who were writing after the period of Roman expansion—made occasional use of stade distances that were conversions from distances expressed in Roman miles and measured along Roman roads. The distance along the Via Egnatia from Apollonia to Kypsela, discussed by Strabo at 7.7.4 C322, is just such a distance. Strabo's comments in this passage concern the conversion rate from miles to stades used by Polybios and others in working out the stade distance along this road.¹⁴ These comments have, I believe, been

¹⁴I take it that the Via Egnatia from Apollonia to Kypsela was, therefore, built by the time that Polybios wrote—at any rate, the gist of 7.7.4 C322 is that Polybios had the same mile figure for Apollonia-Kypsela as given by the milestones of the Via Egnatia.

misconstrued. It is to Strabo's comments at 7.7.4 C322 that we must now turn our attention.

PART 2: STRABO GEOGRAPHY 7.7.4 C322

The context is this: Strabo has arrived in his discussion of the inhabited world at the section of Europe south of the Illyrian and Thracian mountains, between the Adriatic and the Propontis. He begins with the Adriatic coastline. At 7.7.4 C322 he tells us that the beginning of this section of the coastline is marked by Epidamnos and Apollonia, whence the Via Egnatia stretches east into Makedonia. The road is, Strabo tells us, measured in miles and marked with milestones as far as Kypsela and the river Hebros (near which Kypsela was situated). The total distance (presumably from Apollonia to Kypsela) is 535 Roman miles. Strabo continues:

λογιζομένῳ δέ, ὡς μὲν οἱ πολλοί, τὸ μίλιον ὀκταστάδιον τετρακισχίλιοι ἂν εἶεν στάδιοι καὶ ἐπ' αὐτοῖς διακόσιοι ὀγδοήκοντα, ὡς δὲ Πολύβιος, προστιθεὶς τῷ ὀκτασταδίῳ δίπλεθρον, ὃ ἔστι τρίτον σταδίου, προσθετέον ἄλλους σταδίους ἑκατὸν ἑβδομήκοντα ὀκτώ, τὸ τρίτον τοῦ τῶν μιλίων ἀριθμοῦ. Str. 7.7.4 C322

Reckoning as the majority does, eight stades to the mile, that would be 4280 stades; but reckoning as Polybios does—adding 2 plethra,¹⁵ or a third of a stade, to the eight stades—another 178¹⁶ stades, or the third of the number of miles, have to be added.

Strabo thus gives two conversion rates from the Roman mile to the stade. The first, which he attributes to "the majority," is 8 stades to the mile. The second, which he attributes to Polybios, is effectively $8\frac{1}{3}$ stades to the mile. In the particular instance of the route from Apollonia to Kypsela, Polybios' reckoning results in a "stade addition" of $\frac{1}{3}$ times 535 (the number of Roman miles), i.e., the 178 stades noted by Strabo (the precise figure being $178\frac{1}{3}$). This "addition" is to the figure of 4280 stades used by "the majority"—although Strabo never actually gives the total produced by Polybios' calculation. The omission of Polybios' total suggests that Strabo himself prefers the figure of 4280 and, implicitly, the conversion rate of 8 stades to the mile.

For the dating of the Via Egnatia to Polybios' time—for which Strabo 7.7.4 is critical evidence—see Walbank, "The Via Egnatia" 137–140. R. Kallet-Marx, *Hegemony to Empire: The Development of the Roman Imperium in the East, 148–62 B.C.* (Berkeley, forthcoming), narrows the date down to the decade of the 130s B.C. I am grateful to Robert Kallet-Marx for discussing the date of the Via Egnatia with me prior to the publication of his book.

¹⁵6 "plethra" = 1 stade (Hultsch 698).

¹⁶In the Loeb edition of Polybios (W. R. Paton, *Polybios: The Histories. Vols 1–6* [London and New York 1922–27]), the translation "178 stades" is misprinted as "678 stades," making the calculation impossible to follow (6.333).

Before going on to look at the $8\frac{1}{3}$:1 conversion rate attributed to Polybios, it is worth looking in more detail at the 8:1 ratio used by Strabo and “the majority”. The length of the Roman mile is known. It is 5000 Roman feet of 29.6 cm,¹⁷ and is, therefore, equivalent to 1480 m. Dividing this figure by 8, we get 185 m. The stade consists of 600 Greek feet. A stade of 185 m would therefore be based on a Greek foot of 30.8 cm,¹⁸ which is attested archaeologically. Literary evidence comes from Pliny and supports both 185 m for the length of the stade and 8:1 as the conversion rate from Roman miles to stades. At *HN* 2.85,¹⁹ Pliny equates the stade to 625 Roman feet, equivalent to 185 m.²⁰ At *HN* 12.53,²¹ Pliny explicitly equates 40 stades to 5 Roman miles, which points to a conversion rate of 8:1. Finally, at *HN* 2.247, Pliny converts Eratosthenes’ figure of 252,000 stades for the circumference of the earth into 31,500 Roman miles, which again points to a conversion rate of 8:1.

We can now turn to the conversion rate attributed to Polybios of $8\frac{1}{3}$:1. If we assume that Polybios’ different conversion rate is the result of a variation in the length of one of the two units of measurement involved in his conversion, and if we assume that the Roman mile is a fixed and invariable measurement,²² the conclusion at first sight seems to be that Polybios is converting to a stade of 177.6 m (1480 m divided by $8\frac{1}{3}$) or 178 m rounded to the nearest metre. Consequently, it has been assumed that there was a stade of 178 m, which was used by Polybios, and this stade is the stade to which the adjective “Polybian” is attached.²³

¹⁷29.6 cm for the Roman foot in question is based on archaeological evidence (Hultsch 88–98 and 700).

¹⁸30.8 cm for the Greek foot in question finds support from the archaeological evidence of the Parthenon and the stadium at Athens (Hultsch 66–72 and 698; Engels 308, n. 33). This of course means that the stadium at Athens is the same length—185 m from start to finish—as the stade based on the foot of 30.8 cm.

¹⁹Pliny *HN* 2.85: *stadium centum viginti quinque nostros efficit passus, hoc est pedes sexcentos viginti quinque*. 1 “passus” = 5 Roman feet (Hultsch 700).

²⁰625 multiplied by 29.6 cm = 185 m. 5000 feet divided by 625 feet = 8.

²¹Pliny *HN* 12.53: *schoenus patet Eratosthenis ratione stadia XL, hoc est passuum V milia . . .* Lehmann-Haupt argues that Pliny is in error and should have written “4 miles” (col. 1936). There seems to be no good reason for Lehmann-Haupt’s argument. For a good discussion of this passage, see Engels 299–300 and 308.

²²N. G. L. Hammond (*A History of Macedonia* 1 [Oxford 1972] 55–56) argues that the unit that varies, in Polybios’ conversion, is the mile and that Polybios is here converting from stades of the same length as used by the “majority” but to “Polybian” miles of $8\frac{1}{3}$ stades rather than the normal Roman mile of 8 stades. This is unconvincing. It entails that Polybios is converting from stades to miles, whereas Strabo’s reference seems clearly to be a conversion by Polybios from miles to stades. For a good discussion of Hammond’s hypothesis, see Walbank, *Historical Commentary* 3.625–626.

²³This is a suitable point to review the nomenclature used by modern scholars for the stades of 185 m and 178 m. The nomenclature is confusing and makes it difficult

The alternative is to assume that Polybios' different conversion rate reflects not the use of a different stade, but rather a difference in the degree of accuracy with which the conversion factor from miles to stades is expressed. It has generally been assumed that if the difference between the conversion rates of 8:1 and $8\frac{1}{3}$:1 is due to different degrees of accuracy, then Polybios' conversion rate of $8\frac{1}{3}$:1 must be the more accurate one, with 8:1 being rounder but less accurate.²⁴ The problem with this assumption, that 8:1 is a rounded conversion rate, is that it flies in the face of the evidence that Strabo and other geographical writers used the conversion rate of 8:1 because this was the correct conversion rate for the 185 m stade.

There is another explanation for Polybios' conversion rate of $8\frac{1}{3}$ stades at Strabo 7.7.4, which is that, paradoxically, it is a *less accurate* conversion from Roman miles to normal geographic stades of 185 m. Today we can work out the conversion from Roman miles to stades by means of a third measurement system, viz., the modern metric system. We can give the metric equivalent of the Roman mile (1480 m), the metric equivalent of the stade (185 m), and work out a conversion rate from miles to stades (1480 divided by 185 = 8). It is worth stating the obvious, that in antiquity comparison of the Roman mile and the stade was not made by means of our modern unit. Instead, presumably, the conversion rate would have been worked out by means of a comparison of the constituent units of the stade and the Roman mile.

to draw together the scholarship on these stade lengths. Hultsch (64, n. 3) originally called the stade of "8 to the Roman mile" (i.e., the 185 m stade) the *Olympic stade*, but later changed it to the *stade of the Attic foot*. Lehmann-Haupt (cols. 1933-34) calls the stade of "8 to the Roman mile" (185 m) the *Italic stade*, while calling the stade of " $8\frac{1}{3}$ to the Roman mile" (178 m) the *stade of the Attic-Roman foot* or the *Olympic stade*. More recently, Engels (298) calls the 185 m stade the *Attic stade*. The different editors of the Budé edition of Strabo's *Geography* vary in their practice. Aujaç (1[2].192) gives the name of *Attic stade* to the "Polybian stade of 177.7 m" and the name of *Roman stade* to the "185 m stade of Artemidoros of which there are 8 to the Roman mile." Baladié (4.136, n. 3) calls the stade of 185 m the *Italic stade*, while giving the name of *Attic stade* to the "Polybian stade of 177.6 m equivalent to $\frac{3}{25}$ of a Roman mile." Lasserre (2.16, n. 2) follows the practice of giving the name of *Attic stade* to the "185 m stade of Artemidoros of which there are 8 per Roman mile." The names *Italic* and *Olympic* applied to the stade go back to Censorinus, a non-geographical writer of the third century A.D., who may not be reliable on this point (see below, 60). As for geographical writers, Strabo never gives a "name" to the stade he uses, nor as far as we can tell does any other geographical writer in classical antiquity—probably because there was no need to.

²⁴Walbank, *Historical Commentary* 3.623-624. As a consequence of his assumption that $8\frac{1}{3}$ is the more accurate conversion, Walbank believes that the "normal" stade is the stade arrived at by dividing the mile by $8\frac{1}{3}$ (which Walbank gives as "178.5 m"). J. O. Thompson (*History of Ancient Geography* [New York 1965] 162) also labels the stade of $8\frac{1}{3}$ to the mile the "ordinary stade."

There were by definition 600 Greek feet in a stade, and 5000 Roman feet in a Roman mile.²⁵ Since the foot on which the 185 m stade was based did not vary greatly in length from the Roman foot on which the Roman mile was based, it would be understandable if a rough conversion were made by dividing the number of feet in a Roman mile by the number of feet in a Greek stade (5000 divided by 600 = $8\frac{1}{3}$). $8\frac{1}{3}$ stades to the Roman mile is the conversion rate achieved on this basis.²⁶

A more accurate conversion from the Roman mile to the 185 m stade has to take into account the small discrepancy in actual length between the relevant Roman foot and Greek foot. Although the Greek foot varied slightly from place to place, the foot on which the stadium and Parthenon at Athens was based is equivalent to 30.8 cm. This is the length of the foot implied by the 185 m stade. The Roman foot also varied, but the foot on which the Roman mile was based is equivalent to 29.6 cm, and therefore slightly smaller than the Greek foot. To make allowance for this, the rough conversion rate of $8\frac{1}{3}$ stades to the Roman mile should be multiplied by a factor of 0.96 (29.6 divided by 30.8). This results in a conversion rate of 8 stades to the mile ($8\frac{1}{3}$ multiplied by 0.96 = 8).

Eight stades to the mile, although a simpler figure, is in fact a more precise conversion. It is thus consistent with Strabo 7.7.4 to argue that what Polybios actually used was the same 185 m stade as “the majority” but that he made only a rough conversion when expressing Roman mile measurements in terms of stades, at least in the case of the distance from Apollonia to Kypsela. If Strabo’s reference at 7.7.4 is to the difference between Polybios’ rough conversion rate and the more accurate conversion rate used by others—rather than to the difference between Polybios’ stade and the stade used by others—this would explain why Strabo does not make the reference until this point in the *Geography*. Strabo has already used several stade distances derived from Polybios by the time we reach 7.7.4 so that, if Polybios used a different stade from the majority, we should expect Strabo to have given us this information already. The perfect opportunity would have been in Strabo’s introductory review of Polybios early on in his work at 2.4. If, on the other hand, Polybios did not use a different stade but did use a different conversion rate when converting from Roman miles to stades, then we should expect Strabo to give us this information if and when it becomes relevant.

²⁵Hultsch 698 and 700.

²⁶Hultsch (65) commented on the possibility that $8\frac{1}{3}:1$ was a rough conversion in this way but did not take the argument further. His comments seem to have been disregarded by later scholars. Hultsch elsewhere appears (53, n. 2) to have preferred the alternative argument that it was 8:1 which was the rough conversion and Polybios’ $8\frac{1}{3}:1$ which was the more precise conversion (for the 178 m stade).

The information about Polybios' rough conversion rate becomes relevant at 7.7.4 because in this passage Strabo deals with the stade distance along the Via Egnatia from Apollonia to Kypsela as converted from Roman miles by Polybios and others, and because it is the first stade distance explicitly based on a mile conversion that Strabo has reported for Polybios.²⁷ Later in the passage, at 7.7.4 C323, Strabo cites Polybios for the figure of 267 miles along the first stretch of the Via Egnatia, from Apollonia or Epidamnos to Thessalonikeia. Earlier, at 2.4.4 C106, Polybios has been cited for the figure of "more than 2000 stades" for the distance from Epidamnos to Thessalonikeia. If the figure of "more than 2000 stades" is a conversion from the mile figure of 267 miles, Strabo does not choose to tell us so at 2.4.4. Moreover the expression "more than 2000 stades" would cover both a rough Polybian conversion at $8\frac{1}{3}:1$ ²⁸ and a more accurate conversion at 8:1.²⁹ It is possible that in this earlier passage, Strabo is purposely avoiding the issue of Polybios' conversion rate for the time being.

In support of the argument that the conversion rate used by Polybios was a rough one it should be noted that Polybios may well have been one of the first writers for whom the conversion between miles and stades became an issue. The Romans seem to have had little use for stades at this early stage, except perhaps for nautical distances already expressed in this way.³⁰ As for the Greeks, Polybios—a Greek who was held hostage at Rome, a contemporary of and commentator on the Roman expansion into Achaëa, a geographer who used Roman as well as Greek sources³¹—may well have been the first geographer to have occasion to include in his work stade distances based on conversions from Roman mile measurements. It is indeed possible that it was the building of Roman roads in areas where previously the stade was the normal unit that ultimately prompted the realisation that the accurate conversion rate was 8 stades, not $8\frac{1}{3}$, to 1 Roman mile.³² At any rate, it is the later writers—Strabo himself at 7.7.4 and Pliny (see above, 56)—who use the accurate conversion rate of 8:1.

The other supposed evidence—material and literary—for a stade of 178 m needs to be reviewed. The supposed evidence for such a stade—let alone its attribution to Polybios—is scanty but often crops up in discussions of the

²⁷Strabo cites Polybios for a mile distance derived from milestones up the east coast of Italy (Str. 6.3.10 C285), but does not give a stade distance based explicitly on a conversion by Polybios for this distance.

²⁸267 multiplied by $8\frac{1}{3}$ = 2225 stades.

²⁹267 multiplied by 8 = 2136 stades.

³⁰M. Gwyn Morgan, "Pliny *HN* III 129: The Roman Use of Stades and the Elogium of C. Sempronius Tuditanus," *Philologus* 117 (1973) 29–48, in particular 34–36.

³¹See Walbank, *Historical Commentary* 1.1–6, for Polybios' biographical details.

³²I am indebted to one of the anonymous referees of this article for this point.

subject. The length of the stadium at Delphi is 177.5 m³³ and might be taken to imply a stade of that length or of approximately 178 m in rounded terms—but this is dubious. In Greek, the word I translate “stade” is of course the same as the word I translate as “stadium,” viz. *στάδιον*. The stadia, or race-tracks, of Greece vary in their lengths.³⁴ If the stadia, or race-tracks, are all supposed to be 600 feet long—just as the stade is 600 feet long—then we might deduce from this that there was a regional variation in the Greek foot according to which the different stadia, or race-tracks, were measured out.³⁵ Thus it is possible that the stadium, or race-track, at Delphi was based on a local variation of the Greek foot, which was equivalent to 29.6 cm (the same length as the Roman foot).³⁶ However, even if this were the case, it is questionable whether we can go on to assume that there was also a local variation of the stade (a unit which had little application on a local basis) based on the same local foot of 29.6 cm according to which the stadium, or race-track, was measured out. Furthermore, even if there were such a local stade, there is no need to assume that Polybios would have used it.

Turning now to the literary evidence, Censorinus (*De die natali* 13.2) mentions a stade (which he calls “Italicum”) of 625 feet, and a stade (which he calls “Olympicum”) of 600 feet.³⁷ I take this to be a reference to the fact that a stade based on 600 Greek feet of 30.8 cm is equivalent to 625 Roman feet of 29.6 cm.³⁸ It is true that Censorinus thinks that these two stades are different in length and presumably therefore that they are based on the same foot (presumably the Roman foot). Censorinus is not, however, a geographical or metrological writer. *De die natali* concerns themes of birth and generation, natural cycles, and dating systems. Censorinus is, moreover, a late writer (early to mid third century A.D.).³⁹ The stades he mentions are in connection with his reference back to the measurement of the world by

³³Dinsmoor 251. Dinsmoor gives the length in feet and inches, which I have converted to metres.

³⁴The stadium at Olympia is 192 m, Miletos 191 m, Epidauros 181 m, compared to the stadium at Delphi of 178m and the stadium at Athens of 185 m (Dinsmoor 251).

³⁵Dinsmoor (251) is dubious about this: “It is hardly reasonable to assume that these stadia were erected with reference to so many local varieties of foot units; the true reason still escapes us.”

³⁶178m divided by 600 = 29.6 cm.

³⁷Censorinus (*De die natali* 13.2) tells us that Eratosthenes calculated the circumference of the earth at 252,000 stades, and that Pythagoras showed how many stades there were between the earth and the individual stars. Censorinus continues: *stadium autem in hac mundi mensura id potissimum intellegendum est, quod Italicum vocant, pedum sescentum viginti quinque; nam sunt praeterea et alia longitudine discrepantia, ut Olympicum, quod est pedum sescentum . . .* Despite the name “Olympic,” there does not appear to be a connection with the stadium at Olympia, which is 192 m long (Dinsmoor 251).

³⁸See Pliny *HN* 2.85, discussed above, 56.

³⁹G. Rocca-Serra, *Censorinus: Le Jour natal* (Paris 1980).

Eratosthenes. It is possible that Censorinus has misunderstood his sources (confusing the ratio between the Greek and Roman foot of 625:600 with the ratio between two supposed stades of different length). At any rate, Censorinus himself tells us that it is the "Italic" stade of 625 (presumably Roman) feet, i.e., the stade of 185 m, which is used in the measurement of the world. If there ever was a separate "Olympic" stade containing 600 Roman feet, i.e., a stade of 178 m, there is no need to assume that it was used by Greek geographers in general or Polybios in particular.

There is a reference in a metrological table that appears in several Byzantine texts to a conversion rate between the Roman mile and the stade of $8\frac{1}{3}:1$.⁴⁰ The table is excerpted from the earlier work of Julianos of Askalon,⁴¹ who is probably to be dated between the early fifth and mid sixth century. However, the reference is to the very passage of Strabo that we have been discussing (7.7.4 C322), which has been garbled and misunderstood.⁴² It cannot be taken as independent evidence for a stade of 178 m.

Finally, I offer tentative support for my argument that Strabo and Polybios used the same stade but different conversion rates from another passage in the latter part of Book 7 of Strabo's *Geography*. This latter part of Book 7 itself is lost and we rely largely on the *Epitome*—a text preserved in a Vatican manuscript dating at least as far back as the fifteenth century⁴³—for evidence of its contents. The passage of the *Epitome* in which I am here interested is published in the Budé edition of Strabo as Book 7, fragment 56 (= fr. 57 C331 in the editions of Kramer and Meineke). This passage contains a citation of Polybios and consequently, like 7.7.4 C322, it has been treated as a "fragment" of the lost book 34 of Polybios (it is fragment 34.12.9–10 in Büttner-Wobst's edition of Polybios).

In fr. 56, we are given the information from Strabo that: the distance from Perinthos to Byzantion is 630 stades; the distance from Hebros and Kypsela to Byzantion as far as the Kyanean rocks (i.e., slightly beyond Byzantion) is 3100 stades, according to Artemidoros; the total distance

⁴⁰The table appears in the fourteenth-century *Manuale Legum* of Konstantinos Harmenopulos (ed. G. E. Heimbach [Leipzig 1981, repr. 1969]) and contains the statement that the mile according to Eratosthenes and Strabo has $8\frac{1}{3}$ stades (*Manuale Legum* 2.4.12). Virtually the same table appears in the late ninth- or early tenth-century *Sylloge Tacticorum* (ed. A. Dain [Paris 1938] 3.2)—with $8\frac{1}{4}$ rather than $8\frac{1}{3}$. O. Viedebant (*RE* 10.1 [1918] cols. 17–19, s.v. "Iulianos") cites $8\frac{1}{3}$ from another manuscript.

⁴¹Scholars have differed on the attribution of the metrological table to Julianos. For the latest arguments for the validity of the attribution and the dating, see J. Geiger, "Julian of Ascalon," *JHS* 112 (1992) 31–43.

⁴²Whatever figure is followed, the stade length thus obtained for Eratosthenes and Strabo is unsubstantiated and in fact contradicted elsewhere. For the argument that the statement is a misremembered citation of Strabo 7.7.4, see I. G. Kidd, *Posidonius: The Commentary* 2.2 (Cambridge 1988) 729–731.

⁴³A. Diller, *The Textual Tradition of Strabo's Geography* (Amsterdam 1975) 60–62.

from the Ionian Gulf in the region of Apollonia, as far as Byzantion, is 7320 stades. The fragment continues:

προστίθησι δ' ὁ Πολύβιος καὶ ἄλλους ἑκατὸν ὀγδοήκοντα, τὸ τρίτον τοῦ σταδίου προσλαμβάνων ἐπὶ τοῖς ὀκτῶ τοῦ μιλίου σταδίοις. Str. 7 fr. 56

Polybios adds another 180 (stades), adding a third of a stade to the eight stades to the mile.

The figure of 180 stades in fr. 56 is suspiciously close to the figure of 178 stades in 7.7.4, rounded up, as is commonly the case in Strabo, to the nearest 10 stades.⁴⁴ Polybios' "addition" is explained in fr. 56 (just as at 7.7.4) as the result of his conversion from Roman miles to stades. It seems that what we have in fr. 56 is another reference⁴⁵ to Polybios' calculation for the road from Apollonia to Kypsela, this time in connection with Polybios' calculation for the total distance from Apollonia via Kypsela to Byzantion. Taking into account the information we have been given earlier at 7.7.4, the leg from Kypsela to Byzantion will have been estimated at around 3040 stades and the overall calculation worked out along the following lines:

	<i>Strabo</i>	<i>Polybios</i>
Apollonia to Kypsela	4280 (Str. 7.7.4)	4280 + 180 (Str. 7 fr. 56)
		<hr/> 4460
Kypsela to Byzantion	3040	3040
	<hr/> 7320 (Str. 7 fr. 56)	<hr/> 7500

Artemidoros' figure of 3100 stades from Kypsela to the Kyanean rocks—a sea route—cited at the beginning of 7 fr. 56 cannot have figured directly in Polybios' calculation,⁴⁶ since Polybios' work preceded that of Artemidoros.

⁴⁴The figure of 178 itself is rounded to the nearest whole number from 178¹/₃.

⁴⁵Conceivably, the reference in *Geography* 7 fr. 56 was made by the writer of the *Epitome* from which the fragment is taken, rather than by Strabo himself. This does not affect the observation that the reference appears to be the same conversion as in Strabo 7.7.4, but this time in relation to the total distance from Apollonia to Byzantion.

⁴⁶Walbank (*Historical Commentary* 3.627) refers to "the section Cypsela-Byzantium, for which P[olybios] takes Artemidoros' figures calculated in stades . . ." Walbank must mean Strabo rather than Polybios, for Walbank later says that Polybios probably did not give a total distance for the route from Apollonia to Byzantion and that Strabo did not therefore derive the total distance from Apollonia to Byzantion from Polybios, but worked it out himself by taking his own conversion for the mile distance from Apollonia to Kypsela (4280 stades), adding Artemidoros' figure for Kypsela to Byzantion (3100 stades) and a further 180 stades for Polybios' adjustment (to the Apollonia to Kypsela route). This totals 7560 stades, which Walbank claims that Strabo rounded down to 7500, but expressed as 7320 + 180 for the Polybian adjustment. It seems pointless for Strabo to add 180 stades for the Polybian adjustment only to take it off again, and it is much more likely that Polybios himself was responsible for the estimate of a total of

The existence of virtually the same discrepancy between Polybios' and Strabo's stade figures for the total distance Apollonia-Byzantion as for the much shorter distance Apollonia-Kypsela demonstrates that the discrepancy exists *only* for the road from Apollonia to Kypsela, and *not* for Kypsela to Byzantion. Since the discrepancy is the product of different conversions from a Roman mile figure, the most plausible explanation is that both Strabo (or more precisely "the majority" whom Strabo follows in 7.7.4) and Polybios used a conversion from Roman miles to stades only for the first leg—the Via Egnatia from Apollonia to Kypsela⁴⁷—while for the leg from Kypsela to Byzantion they both simply used an estimate made directly in stades—probably calculated along the ancient road from Kypsela to Byzantion.⁴⁸ Moreover, Strabo must be using the same stade figure as Polybios for the second leg of the journey. This is anomalous if it is assumed that Strabo used a different *stade* from Polybios, but perfectly in order if it is assumed that Strabo used the same stade as Polybios but a different *conversion rate* from miles to stades.⁴⁹

A summary of the observations made in Part 2 of this article is as follows. A comparison of 7.7.4 and fr. 56 suggests that Polybios had a mile figure from Apollonia to Kypsela but no further. The discrepancy between Polybios' and Strabo's figures for Apollonia via Kypsela to Byzantion is restricted to this leg from Apollonia to Kypsela. The discrepancy is therefore due to the difference between the rate used by Polybios and that used by Strabo to convert from miles to stades and not to the use by Polybios of a different stade. This fits with the evidence from a general reading of Strabo's *Geography*, discussed in Part 1 of this article, that Polybios used the standard geographic stade. The weight of evidence is that this was the stade of 185 m or 8 to the Roman mile. The conversion rate attributed to Polybios ($8\frac{1}{3}$ stades to the mile), although incorrect for the 185 m stade, is understandable as an early and approximate conversion.

It should be noted that, although both 7.7.4 and fr. 56 are treated as "fragments" of Polybios, what we actually have in those parts of 7.7.4 and

7500 stades. Why else would Strabo make any reference at all to Polybios in relation to the total distance from Kypsela to Byzantion?

⁴⁷See Walbank, "The Via Egnatia" 136–139. Walbank reaches the same conclusion as I do, that Polybios had a mile figure only as far as Kypsela. However, he believes that Polybios did not give a stade figure from Kypsela to Byzantion, nor a total distance from Apollonia to Byzantion. Walbank does not use Strabo fr. 56, as I have done, to argue that Strabo used the same stade as Polybios, but rather as evidence for the dating of the Via Egnatia and its extension from Apollonia to Kypsela.

⁴⁸Adams 271.

⁴⁹This is preferable to the argument of G. Radke (*RE Supp.* 13 [1973] cols. 1417–1686, s.v. "Viae Publicae Romanae," particularly col. 1666) that the application of Polybios' 180 stades to the distance from Apollonia to Byzantion must be a mistake. Adams (285 and 297–301) also argues that it is an error.

fr. 56 which have been analysed in the earlier part of this article are not the words of Polybios himself nor even reports of the words of Polybios, but a comment by Strabo (and in the case of fr. 56, an epitomised version of that comment) on Polybios' calculation. In both passages, Polybios is described as "adding" the 178/180 extra stades. The "addition" is only, however, from Strabo's perspective, looking back at Polybios' figure as compared to later sources. Polybios was not "adding" stades to a pre-existing conversion from miles to stades. Indeed, the likelihood is that Polybios was the first to convert the mile distance from Apollonia to Kypsela into stades.

PART 3: POLYBIOS HISTORIES 3.39.8

The only other passage of which I am aware from a work within the Greek geographical tradition⁵⁰ where an equation between miles and stades is explicitly given comes from the extant part of Polybios' work (*Histories* 3.39.8). The equation explicitly given there is 8 stades to the mile. Ironically, we are in the position where support for the accuracy of the 8:1 conversion rate, and for the 185 m stade, comes from the very author who is supposed to have used the conversion rate of 8 $\frac{1}{3}$:1. Before looking at the various possible explanations for this inconsistency, we should look in more detail at the passage itself.

Polybios is giving the geographical background to Hannibal's march from New Carthage in Iberia across the Pyrenees and the Alps into Italy. The leg of 1600 stades to the crossing of the Rhone (from Emporion, ignoring unnecessary corrections to the text) is described with words that show an awareness of a conversion rate of 8 stades to the Roman mile, as opposed to the 8 $\frac{1}{3}$:1 ratio attributed to Polybios by Strabo:

ταῦτα γὰρ νῦν βεβημάτισται καὶ σεσημείωται κατὰ σταδίους ὀκτὼ διὰ Ῥωμαίων ἐπιμελῶς. Polyb. *Histories* 3.39.8

For this has now been measured and marked with milestones carefully by the Romans at every 8 stades.

The discrepancy between the conversion factor here and at Strabo 7.7.4 is not the only interesting feature in this passage.⁵¹ The road which has been "measured and marked with milestones" is probably the Via Domitia,

⁵⁰I exclude the various metrological tables and writings, mostly of late date and uncertain origin, which give 7 and 7 $\frac{1}{2}$, as well as 8, stades to the mile (F. Hultsch, *Metrologicorum Scriptorum Reliquiae* 2 vols [Leipzig 1864]; see index in vol. 2 under "milion"); J. L. Heiberg, *Heronis Alexandrini Opera quae supersunt omnia* 4 [Leipzig 1912] 194 and 402). Such tables define the value of regional stades or miles. In general, there is no reason to believe they are relevant to the stade used by geographers of classical antiquity.

⁵¹For a full discussion of the Polybian scholarship concerning this passage, see Walbank, *Historical Commentary* 1.373 and 2.636, "Addenda and Corrigenda to Vol. 1."

which is unlikely to have been constructed before 120 B.C.⁵² If so, the passage will not have been written before 120 B.C., which means that it would be a later insertion either by Polybios himself or by a posthumous editor, since the original composition of Book 3 of Polybios' *Histories* is placed before the period 150–146 B.C.⁵³

If the passage at *Histories* 3.39.8 were a later insertion by Polybios himself, then it would provide a clue to Polybios' dates, as the probable reference to the Via Domitia—the latest datable reference in the *Histories*—would mean that Polybios was still alive in 120 B.C. and for long enough afterwards to incorporate mention of the Via Domitia into his work. Taking the passage as a later insertion by Polybios himself thus suits those who argue (partly on other evidence) for Polybios' birth ca 200 B.C. and death ca 118 B.C. On the other hand, if it can be shown that the passage was a later insertion not by Polybios himself but by a posthumous editor, then the passage cannot be taken as evidence that Polybios was still alive in 120 B.C. nor used against those who prefer earlier dates for Polybios (ca 208–126 B.C.).⁵⁴

The discrepancy between the conversion rate of 8 stades to the Roman mile in Polybios *Histories* 3.39.8 and the conversion rate of $8\frac{1}{3}$ stades to the mile attributed to Polybios by Strabo, in *Geography* 7.7.4 and fr. 56, has loomed large in these arguments. Those who argue for the earlier dates for Polybios' birth and death see the discrepancy between the conversion rates as grounds for denying the Polybian authorship of the relevant passage at *Histories* 3.39.8; while those who argue for later dates for Polybios, partly on the basis of his authorship of *Histories* 3.39.8, have to reconcile Polybios' awareness there of a conversion rate of 8 stades to the Roman mile with Strabo's attribution to Polybios of a conversion rate of $8\frac{1}{3}$ stades to the mile.

The attempt to reconcile Polybios 3.39.8 with Strabo has hitherto been based on the argument that in the former passage Polybios is merely opting for a "loose" or rounded conversion rate, compared with the "more accurate" $8\frac{1}{3}$ stades that he is supposed more generally to employ, for example at Strabo 7.7.4 and fr. 56.⁵⁵ This argument has always seemed unlikely, partly because at Strabo 7.7.4 Polybios is specifically differentiated from

⁵²Eckstein 393–397.

⁵³Walbank, *Historical Commentary* 1.292–297 and *idem*, *Polybius* (Berkeley 1972) 19–21. Walbank believes that at least the first fifteen books had probably already been written before the period 150–146 B.C.

⁵⁴Eckstein (387–391) gives a useful summary of the arguments for Polybios' dates.

⁵⁵Eckstein 391–392; and Walbank, *Historical Commentary* 1.373. Walbank later revised his earlier views, accepted that 3.39.8 was a posthumous insertion, but argued that Polybios was nevertheless still alive until after the construction of the Via Domitia (*Historical Commentary* 3.768, "Addenda and Corrigenda").

those who use the 8:1 conversion rate, and partly because such an interpretation does not fit the wording of Polybios *Histories* 3.39.8, that Roman milestones are set up “carefully” at every 8 stades.

My argument in this article—that the $8\frac{1}{3}$:1 ratio attributed to Polybios by Strabo at 7.7.4 and fr. 56 refers to the use by Polybios of an early, inaccurate and rounded conversion rate—alters the complexion of Polybios 3.39.8. I do not deny that the discrepancy between the rates mentioned in these passages may indicate the posthumous insertion of 3.39.8. On the other hand, for those who wish to argue that 3.39.8 is a later insertion by Polybios himself, the argument should now be that Polybios is there using the more accurate rate compared to the inaccurate rate he used earlier and to which Strabo refers. The explanation would have to be that Polybios only became aware of the correct conversion rate at a very late stage—possibly no earlier than 120 B.C. I accept that this argument is very hypothetical—I merely offer it as a possibility.

Finally, according to my argument in this article that Polybios used the $8\frac{1}{3}$:1 conversion rate from miles to stades and not the 8:1 ratio (unless he moved to it at a very late stage if and when he added 3.39.8), we might expect to find other evidence for the $8\frac{1}{3}$:1 rate in the extant part of his work (Books 1–5). Unfortunately, I do not believe the evidence is sufficient either to prove or to disprove my argument. There are no other explicit references to Polybios’ conversion rate, nor indeed to any other of his stade distances being conversions from Roman mile figures. Some undoubtedly were—but Polybios’ stade totals are usually very rounded. It is, therefore, no use dividing the figures given by Polybios by 8 and by $8\frac{1}{3}$ to see if one or the other yields a “likely” original figure in miles and deducing on that basis that the stade distance given by Polybios was a conversion from miles and what conversion factor was used.⁵⁶ If some of Polybios’ stade distances were based on mile figures, we do not know what the original figures were nor whether they were mile measurements or mile estimates. The latter is relevant because Polybios may have been more inclined to round stade figures that were conversions from mile estimates rather than conversions from mile measurements derived from milestones. Comparing Polybios’ stade distances with mile figures from later itineraries does not tell us whether Polybios used a conversion factor of 8 or $8\frac{1}{3}$, because, quite apart from the problem of Polybios’ rounding of the converted figures, there is no evidence that the distances contained in the itineraries (which often vary between themselves) are the same as Polybios might have used, or even measured along exactly the same route.⁵⁷ Finally, the comparison of stade distances given by Polybios with mile distances given by writers

⁵⁶As Eckstein (392) does.

⁵⁷See Eckstein’s comments (392, n. 23).

like Livy who followed Polybios in parts (and converted Polybios' stades to miles) also faces the same problem of rounding.⁵⁸

CONCLUSION

The explicit evidence of Strabo 7.7.4 and fr. 56, taken in conjunction with Strabo's general attitude towards Polybios and other evidence for the length of the stade (including Polybios *Histories* 3.39.8, whether or not it is by Polybios himself), gives rise to a coherent story: 8:1 is the correct conversion rate from Roman miles to stades of 185 m, which is the stade used by geographical writers; Polybios used stade estimates made on the basis of the stade of 185 m but, when converting mile figures into stades, he used an early and approximate conversion rate of $8\frac{1}{3}$:1. The use of the 8:1 ratio at Polybios *Histories* 3.39.8 may indicate that this passage is a later insertion by a posthumous editor. Alternatively, it may be explicable as reflecting Polybios' awareness of the correct conversion rate only at a very late stage.

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⁵⁸Pédech 536, n. 120.