

## PSEUDO-SKYLAX AND THE NATURAL PHILOSOPHERS

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*In memory of Professor Duncan Tanner (1958–2010), ιστορικοτάτου*

**Abstract:** This paper seeks to establish an intellectual context for the *periplous* of Pseudo-Skylax (probably written in or near Athens in 338 to *ca.* 337 BC). The unknown author is aware of the work of contemporary natural philosophers, including those in the post-Platonic Academy and those who were to form the Peripatos, especially Aristotle, Theophrastos and Dikaiarchos. Among known writers, Dikaiarchos is most likely to have written the *periplous*; but the case remains unproven. Doubts are also raised as to the validity of the so-called periplographic genre.

**Keywords:** Pseudo-Skylax, *periplous*, Greek geographical writers, natural philosophy, Dikaiarchos of Messana

### I. Introduction

The *Periplous* (*Circumnavigation*) preserved under the name of Skylax of Karyanda is a prose work of about 8,000 words. It enumerates briefly the coasts and cities of the Mediterranean and Black Sea in a clockwise circuit, beginning and ending just outside the Pillars of Herakles (straits of Gibraltar). Much of the work proceeds by defining regions equated with particular peoples, often (but not always) noting the beginning and end of each territory, naming some important towns (sometimes inland) and ending with the sailing time or distance along its coast, as in these examples:

3. ἀπὸ δὲ Ἰβήρων ἔχονται Λίγυες καὶ Ἰβήρες μιγάδες μέχρι ποταμοῦ Ῥοδανοῦ. παράπλους Λιγύων ἀπὸ Ἐμπορίου μέχρι Ῥοδανοῦ ποταμοῦ δύο ἡμερῶν καὶ μιᾶς νυκτός.

And past the Iberes there follow the Ligyees (*Ligurians*) and Iberes, mixed, as far as the river Rhodanos (*Rhône*). Coastal voyage of the Ligyees from Emporion as far as the Rhodanos river: two days and one night.

109.1. ἀπὸ δὲ Ἑσπερίδων κόλπος ἐστὶ μέγας ᾧ ὄνομα Σύρτις, ὡς δὲ εἰπεῖν ὅτι μάλιστα εἰκάζονται σταδίων ,ε. ἔστιν αὐτῇ τὸ πλάτος ἀπὸ Ἑσπερίδων εἰς Νέαν πόλιν τὴν πέραν πλοῦς ἡμερῶν τριῶν καὶ νυκτῶν τριῶν.

And past Hesperides there is a great gulf, which has the name Syrtis, and (is), so to say, as one guesses approximately, of 5,000 stades. In width it is, from Hesperides to Neapolis (*Lepcis Magna*) on the other side, a voyage of days, three, and nights, three.

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According to Herodotos, Skylax of Karyanda was sent by king Darius, with others, to explore India; his expedition thus dates to the late sixth century BC.<sup>1</sup> The *periplous*, however, is certainly not of that time, since many of the things it asserts entail a fourth-century date. Accordingly, both it and its author are known as Pseudo-Skylax (hereinafter ‘Ps.-Skylax’). The aim of the present paper is not to argue in detail about the work’s date and purpose, but rather – after setting out the current understanding with regard to those questions – to suggest that a plausible intellectual context for its composition has been overlooked.<sup>2</sup>

The *Periplous* is a notoriously problematic text, preserved only in an extremely corrupt late medieval manuscript (two derivative copies add nothing of note).<sup>3</sup> Its original title, if any, is uncertain. As to where and when it originated, the most persuasive view is that it was composed at or near Athens<sup>4</sup> in the third quarter of the fourth century BC.

On a strict interpretation of its internal evidence the text should date from the early 330s.<sup>5</sup> I follow those who regard the author’s inclusion of Naupaktos within Aitolia (§35) as decisive in favour of a *terminus post quem* of 338.<sup>6</sup> As to a *terminus ante quem*, the mention of Boiotian Thebes (§59) is *prima facie* evidence of a date before that city’s destruction by Alexander the Great in autumn 335. Logically, the period after the city’s refoundation by Kassandros in 316 is also possible; but, as the late antique commentator Markianos saw,<sup>7</sup> the rest of the *periplous* shows no awareness of Alexander’s expedition or of its consequences.<sup>8</sup> The *terminus ante quem* can even be raised a little, since the coastal towns of southern Messenia, which Ps.-Skylax puts in ‘Lakedaimon’ (§46.1), ceased to belong to Sparta not long after the battle of Chaironeia;<sup>9</sup> this points to 338, or perhaps 337 if we allow for a delay in the taking, or the implementation, of Philip II’s decision to remove them from Spartan control.

The lower limit of 337 cannot, however, be regarded as impermeable to the same degree as the upper. An author may adopt the standpoint of a time earlier than his<sup>10</sup> own in order to avoid admitting unpalatable truths about the present; he may for some other reason set out to describe the state of knowledge at an earlier time; or he may uncaringly or unknowingly repeat out-of-date information that he has not checked. The more time has elapsed, however, between the apparent and the real date of composition, the more likely it is that the author will betray himself. If Ps.-Skylax is writing well after *ca.* 337, he has managed to conceal his actual epoch to an extraor-

<sup>1</sup> Hdt. 4.44. Panchenko (2002) 11 proposes 518 BC.

<sup>2</sup> Special abbreviations: Dik. = Dikaiarchos; M = fragment in Mirhady (2000); PS = Pseudo-Skylax; W = fragment in Wehrli (1967). Section divisions within chapters of Ps.-Skylax are those introduced in my edition. Some place-names are italicized to show that they are not ancient.

<sup>3</sup> On the mss, see in brief Shipley (2011) 1–4; in detail Marcotte (2000) especially xix–xx, lxxvii–lxxviii.

<sup>4</sup> PS seems to display local knowledge of Attica and to expect his readers to share it: Shipley (2010). His Athenian identity is inferred (by, for example, Marcotte (1990) 32, n.21, 38, n.36; Counillon (1998) 124) on the basis of phrases such as ‘the sea on our side’ (τὴν ἐπὶ ἡμῶν θάλασσαν, §40) and ‘this sea’ (ταύτην τὴν θάλασσαν, §59; τὴν θ. ταύτην, §61); but Marcotte concedes that such words could be used by others – one thinks, for example, of Megarians, Aiginetans and Boiotians. They are probably compatible with any Aegean standpoint. Still less compelling is the idea that the section on the North Cyclades (§58.1–2) adopts an Athenocentric perspective (*contra* Counillon (2001b) 17–19, see Shipley (2011) 132, ad loc.).

<sup>5</sup> Shipley (2011) 6–8.

<sup>6</sup> Müller (1855) xlv; Marcotte (1986); Counillon (2004) 28–31.

<sup>7</sup> In the prefatory note in the ms., plausibly attributed to him, for example by Marcotte (2000) lxxvii. For the text of this note and a translation, see *FGrHist* 2046 T 6 in Shipley (forthcoming).

<sup>8</sup> The grounds advanced for dating one passage to the 310s (Counillon (2007b) 37–9, 42) are not compelling. The use of the newer name, ‘Herakleia’, for Latmos (§99.1) need not date this passage to the late fourth century: both names were probably current earlier (Shipley (2011) 169; Flensted-Jensen and Hansen (2007) 205, n.9). The inclusion of Telmissos (*Fethiye*) within Lykia (§100.1) need not date this passage post-333: it is equally compatible with the early fourth century, and PS may be using old information (Shipley (2011) 173).

<sup>9</sup> Shipley (2004) 550.

<sup>10</sup> We have no evidence about the author’s gender, other than Markianos’ note above the text referring to Skylax of Karyanda; but given the history of Greek geography the author is overwhelmingly likely to have been male.

dinary degree.<sup>11</sup> More relevantly, perhaps, if a work's composition spans a period of years, the writer may not feel obliged to correct later what he wrote at the outset, even if the world has changed in the interim. It remains overwhelmingly probable, however, that the work as we have it (apart from linguistic changes during transmission in later centuries) was finished a year or two before, or at the latest a very few years after, Alexander the Great's accession in 336.

Various apparent *terminus ante quem* dates implied in the text appear, nonetheless, to contradict the above interpretation, notably the inclusion of Greek city-states (*poleis*) that we know, from other evidence, were destroyed earlier, or had at least lost their *polis* status (for example Sicilian Naxos, §13.2).<sup>12</sup> The simplest explanation is that the author has taken data from a range of written sources without updating them. (Oral sources are virtually excluded for this kind of information, since they are unlikely to have been significantly out of date.) Both Ps.-Skylax and his contemporary Theophrastos, in a work of the late 310s or 300s,<sup>13</sup> mention the city of Sybaris without noting that it no longer exists;<sup>14</sup> it has been suggested that for the Italian peninsula Theophrastos draws upon Presocratic sources.<sup>15</sup> If an author of his standing can purvey out-of-date information, *a fortiori* the author of an apparently less sophisticated work may surely be allowed to do so.

Although a date in the mid fourth century may now be regarded as secure, we should note alternative theories since their acceptance would have implications for the authorship and aims of the work. Older views that it is a late antique abridgement of a Classical work,<sup>16</sup> or a Byzantine compilation,<sup>17</sup> find no support today. The chief remaining competitor to the view that the *periplous* was created in the mid fourth century BC is the idea, advanced most insistently by Peretti,<sup>18</sup> that the *periplous* contains an 'ancient nucleus' of genuine travel observations written in the late Archaic period – perhaps by Skylax of Karyanda himself – which was modified piecemeal over time in order to maintain its usefulness as a navigational aid. Peretti also believes the work has connections to early cartography. He still has his followers,<sup>19</sup> but his interpretation raises more problems than it solves. For reasons not to be set out in detail here, I believe that the work does not preserve the experiences of voyagers directly,<sup>20</sup> but only at several removes;<sup>21</sup> that it is not intended for sailors;<sup>22</sup> that the author does not necessarily report anything he has seen himself, except perhaps in Attica;<sup>23</sup> and that it has no connection to maps, which were not in regular use at this period.<sup>24</sup> It aligns itself, rather, with those works of literature that display 'hodological' features, describing space sequentially in order to engage readers' attention through what has been called the 'verbal map'.<sup>25</sup>

<sup>11</sup> Counillon's claim cited at n.8 above would, if accepted, be the only serious argument that part of the text postdates Alexander's death.

<sup>12</sup> The loss of *polis* status, for example through destruction or synoikism, is sometimes harder to demonstrate than its acquisition, and rhetoric (for example on the part of exiles) may deny realities; but it seems to be a real phenomenon. For relevant criteria, see the introduction to Hansen and Nielsen (2004), for example at 53–54.

<sup>13</sup> *HP* 1.9.5. Date: Fraser (1994) 171.

<sup>14</sup> At §13.5 PS mentions Sybaris even though – as 'Sybaris V', not yet identified archaeologically – it had been destroyed within living memory (Diod. 12.22.1).

<sup>15</sup> Fraser (1994) 182.

<sup>16</sup> Vossius (1838) [1651] 167–68; Müller (1855) xlix.

<sup>17</sup> For example Fabricius (1878) v–vi.

<sup>18</sup> At greatest length in Peretti (1979).

<sup>19</sup> For example Garzón Díaz (1998–1999).

<sup>20</sup> See further Shipley (2011) 9–13.

<sup>21</sup> The author never claims to have been to the places he names, unlike, for example, Hanno. He is not simply juxtaposing eye-witness reports: the framing of the narrative is too consistent. Nevertheless, Panchenko (2005), accepting Peretti's date, maintains unconvincingly that PS visited the straits of Gibraltar. See Shipley (2011) 147–48.

<sup>22</sup> For example, as noted below, the text does not furnish ship-captains with what they need to know. Distances in stades, as opposed to days and nights, are unlikely to have been of use to them; many of the stated distances are longer than a day; and navigational landmarks are recorded only sporadically.

<sup>23</sup> Shipley (2010).

<sup>24</sup> Talbert (1987); (1989); Janni (1998); Shipley (2011) 10.

<sup>25</sup> On 'verbal maps' and hodological space, *cf.* Janni (1982) 606–07; (1984) 15–22, 41–59; Dilke (1985) 134; Arnaud (1989); Sundwall (1996); Counillon (2007a) 44; and now Purves (2010).

Situating the composition of the work at or near Athens in the years 338 to *ca.* 337 immediately raises the question of its relationship to contemporary philosophical and scientific research. Dominating the field at the time were the post-Platonic Academy, led since 348/7 by Speusippos, as well as Aristotle, Theophrastos and others outside the Academy; Aristotle was soon to found his Peripatos or Lyceum after returning to Athens in late 335.<sup>26</sup> If our *periplous* was not yet written, it took shape very soon afterwards. It will be the task of the rest of this paper to try to clarify the relationship of the *periplous* to those intellectual activities, with a view to understanding its aims better and, if possible, identifying its author.

Ps.-Skylax and his contemporaries were in a position to draw both information and ideas both from each other – at a time of increasingly active data-gathering about the natural world – and from earlier writers. Although space forbids full discussion here, we should note that Ps.-Skylax takes relatively little, at least at the level of detail, from his geographical predecessors such as Hekataios,<sup>27</sup> Herodotos,<sup>28</sup> Theopompos<sup>29</sup> and Ephoros.<sup>30</sup> The *periplous* of Hanno the Carthaginian,<sup>31</sup> often invoked as a model for the pages on northwest Africa, has in fact few points of concurrence with them after its eighth chapter; in any case, Hanno's *periplous* may be early Hellenistic rather than, as used to be assumed, Archaic (though it may describe a genuine early voyage).<sup>32</sup>

Müller raises, though only tentatively,<sup>33</sup> the possibility that Phileas of Athens wrote our *periplous*; but current opinion makes Phileas fifth century.<sup>34</sup> Ps.-Skylax certainly used him,<sup>35</sup> but must have taken the bulk of his information, including any relevant to the fourth century, from other sources, written or oral. It is in connection with the far west, perhaps, that Ps.-Skylax is most likely to have relied upon oral evidence, perhaps from non-Greek traders.<sup>36</sup> If he also used written sources, they were of a kind or kinds not mentioned in extant literature. It is unlikely that they included navigational gazetteers: ship-captains needed no books to help them, for they could gather information at the waterfront or use interpreters and guides in distant places. Administrative or mercantile records kept by merchants or financiers are a theoretical possibility, though less likely for regions where Ps.-Skylax is significantly out of date. More likely these written sources included earlier regional *periploi* with a literary, rather than a functional or navigational, character.<sup>37</sup>

## II. Context

As noted above, there are signs that the author, whatever his *polis* affiliation, is writing in or near Athens. Given the date and place of production, what was the possible intellectual genesis of the work?

### II.1. The form of the earth

The author of the *periplous* does not state the aim of his work (possibly the opening words are missing). Although the *periplous* divides up most of the *oikoumenē* into *ethnē*, it also presents features at odds with such a scheme. Recent studies point to its having, in general terms, an aim

<sup>26</sup> Diog. Laert. 5.10.

<sup>27</sup> Peretti (1979) 118–49.

<sup>28</sup> See, for example, Counillon (2004) 83 = Counillon (2007a) 39 on the northeast Black Sea.

<sup>29</sup> Peretti (1963).

<sup>30</sup> Peretti (1961).

<sup>31</sup> Ramin (1976); Oikonomides and Miller (1995); Roller (2006) 29–43, 129–32; González Ponce (2011b).

<sup>32</sup> Desanges (1978) 83; Euzennat (1994) 578. For a more detailed analysis of PS's relationship to earlier writers, see Shipley (forthcoming).

<sup>33</sup> Müller (1855) I, more cautiously than some of

those who cite him acknowledge (for example, Baschmakoff (1948) 23).

<sup>34</sup> For example, Marcotte (1986) 169–70; González Ponce (2011a).

<sup>35</sup> Marcotte (1990) 29–31.

<sup>36</sup> See further Shipley (2011) 12. Mark Woolmer suggests (pers. comm.) that PS may have talked to Carthaginians or Phoenicians at the Piraeus.

<sup>37</sup> For the probability that PS draws upon earlier, more local *periploi* in the Black sea, see Counillon (2004) 42–43.

that may truly be called geographical.<sup>38</sup> In particular, the author shows interest in amalgamating his ethnic units into continental entities (Europe, Asia, Libyē), for which he calculates total lengths, as well as into blocs of intermediate size within them. Examples of the latter include the coast from Iberia to France, which he characterizes as well provided with harbours (§4), and the area he describes as ‘continuous Hellas’ (§§33.2–65.2) and within it the Peloponnese (§§40–55). In the case of European Thrace, he divides it into three parts, adding up their separate *paraploi* (coastal sailings) to make a total for the region (§67.10). Also at variance with his normal practice is his description of Crete (§47), a single topographical unit (containing a mixture of *ethnē*, like Sicily), where he abandons the normal coastwise organization of the text, §47), instead zigzagging along the island from west to east.<sup>39</sup>

The *periplous* is far from being an early equivalent of the *Mediterranean Pilot*; it is, rather, a study seeking to represent verbally a large portion of the known world, seemingly conceived as the part accessible to Greeks by sea. The systematic inclusion of sailing distances (some in days and nights, others in stades) can be understood in the context of these observations. Ps.-Skylax calculates the length of each of the continents (§§69, 106.4, 111.8) from the sailing distances he has previously stated, by converting both the nights’ sailing and the distances given in stades into days’ sailing and arriving at a grand total. Although some scholars regard these passages as later additions,<sup>40</sup> none of their language is inconsistent with a Classical date; neither is their purpose discordant with the rest of the *periplous*. Even if we do discount them, it seems clear that by listing the shorter coastal trajectories the author means us to appreciate and compare the dimensions of the parts of the inhabited, accessible world as he has framed it.

If we accept that one of the author’s aims is to present a composite dimension for part of the world, this aligns him with contemporary natural philosophy. Calculating the length of a gulf or an inland sea was not a new exercise – Herodotos does it for the Pontos<sup>41</sup> – but calculating longer maritime distances is a feature of the early Peripatetics within a very few years of Ps.-Skylax. Dikaiarchos of Messana, a ‘pupil’ of Aristotle, is credited with reckoning the distances from the Peloponnese to the Pillars, from the Peloponnese to the head of the Adriatic, from the Peloponnese to Sicily and (by subtraction) from Sicily to the Pillars.<sup>42</sup> One of Ps.-Skylax’s data, seven days and seven nights for Carthaginian territory (§111.6) – which on his own formula of 500 stades per day (§69) equals 7,000 stades – even matches Dikaiarchos’ distance from Sicily to the Pillars, though Ps.-Skylax reckons along the coast (probably from cape to cape) whereas Dikaiarchos expressly gives the distance in a straight line.<sup>43</sup>

Dikaiarchos also devised a *diaphragma* or ‘partition’ between the northern and southern halves of the inhabited portion of the world; it ran from the Pillars of Herakles via Sardinia, Sicily, the Peloponnese and Asia Minor to Mount Imaos (the Himalayas?).<sup>44</sup> The expression with which Agathemerios describes this *diaphragma*, ‘a straight, well-adjusted section’ (τομή εὐθεῖα εὐκράτος),<sup>45</sup> brings to mind the much shorter pair of *diaphragmata* – from Chalkis to Mykale and from Cape Malea to Rhodes – that stand at the end of Ps.-Skylax (§113.1–2), where the headings that introduce them insist upon their directness and straightness: ‘fairly direct in a straight fashion ... straight in a direct fashion’ (ἐπιεικῶς εὐθὺ κατ’ ὀρθόν ... ὀρθὸν κατ’ εὐθὺ). These short transects, however, in no way cohere with the rest of Ps.-Skylax: not only do they eschew a coastwise progress, each being instead a series of hops from island to island, but they cover only a small part of Ps.-Skylax’s world, lying entirely within the Aegean. They seem to

<sup>38</sup> For example, Counillon (1998) 123–24; (2001a) 389–91, 393.

<sup>39</sup> See Counillon (2001a).

<sup>40</sup> For example, Counillon (2004) 8.

<sup>41</sup> Hdt. 4.85–86.

<sup>42</sup> *Fr.* 124 M = *fr.* 111 W = Strabo 2.4.1–3.

<sup>43</sup> The comparison between PS’s distance and that in Dik. is noted by Peretti (1979) 363, 417.

<sup>44</sup> *Fr.* 123 M = *fr.* 110 W = Agathemerios 1.5.

<sup>45</sup> So Diller (1975) 61, following ms. B; ἄκρατος in earlier editions, following ms. C.

be later additions to the text – though nothing requires them to be *much* later.<sup>46</sup> Likewise the list of the 20 largest islands with which the text concludes (§114) – limited to the Mediterranean and biased towards the Aegean – may not be much later than the main text.<sup>47</sup> Either they or the main *periplous* may somehow relate to Dikaiarchos' work; if both, then to two different works of his.

The principle of using shorter distances to calculate the grand proportions of the world, or a large part of it, appears also in a striking passage of Aristotle's *Meteorologica*,<sup>48</sup> a work completed in or after December 337<sup>49</sup> and probably after 335, and thus very likely after Ps.-Skylax. Aristotle expressly refers to calculating the dimensions of the inhabited area of the world on this basis:

τὸ γὰρ ἀπὸ Ἡρακλείων στηλῶν μέχρι τῆς Ἰνδικῆς τοῦ ἐξ Αἰθιοπίας πρὸς τὴν Μαιῶτιν καὶ τοὺς ἐσχατεύοντας τῆς Σκυθίας τόπους πλέον ἢ πέντε πρὸς τρία τὸ μέγεθός ἐστιν, ἐάν τε τις τοὺς πλοῦς λογιζῆται καὶ τὰς ὁδοὺς, ὡς ἐνδέχεται λαμβάνειν τῶν τοιούτων τὰς ἀκριβείας.

The distance from the Pillars of Herakles as far as India is more than five to three in size as compared with that from Aithiopia to Lake Maiotis and the places lying in the furthest part of Skythia, if one reckons up the sea voyages and the roads, to the extent that one can gather the exact dimensions of such things (*Mete.* 2.5.362b 19–25).

'Reckoning up sea voyages' is what Ps.-Skylax does in his summative *paraploi* of the three continents, as well as those of some of his intermediate blocs.<sup>50</sup> Since Aristotle's calculations extend twice as far as those of Ps.-Skylax, it is hard to imagine that Ps.-Skylax wrote after him – at least if, as now seems likely, Ps.-Skylax was working in the ambit of natural philosophers active in Athens. Perhaps he made the first attempt, to which Dikaiarchos responded by refining the method and extending the calculation to India, and Aristotle employed Dikaiarchos' results to compare the length and breadth of the *oikoumenē*. It may have been in a similar spirit of response to earlier investigations that Pytheas of Massalia – not a member of the Peripatos but quite possibly in touch with it<sup>51</sup> – set out, in about the 320s,<sup>52</sup> to explore the North Atlantic, perhaps because Ps.-Skylax had left it out.

A further possible point of contact between Ps.-Skylax and contemporary philosophy is given<sup>53</sup> by the final sentence of the *periplous* proper (§112.12), before the *diaphragmata*:

λέγουσι δέ τινες τούτους τοὺς Αἰθίопας παρήκειν συνεχῶς οἰκοῦντας ἐντεῦθεν εἰς Αἴγυπτον, καὶ εἶναι ταύτην <τὴν> θάλατταν συνεχῆ, ἀκτὴν δὲ εἶναι τὴν Λιβύην.

And some say that these Aithiopes stretch along inhabiting continuously from here to Egypt, and that this sea is continuous, and that Libya is a headland.

<sup>46</sup> Agathemeros, dated first or second century AD by Diller (1975) 59, records (at *prooem.* 4) a *diaphragma* from Euboa to Mykale, essentially the same as that in PS §113.1 (Diller (1975) 72). This need not entail a late date for §113.

<sup>47</sup> It recalls similar lists in Hellenistic authors: see Shipley (2011) 211, ad loc.

<sup>48</sup> Another possible point of contact is that PS §77 and *Mete.* 1.13.351a 11 both mention the Koraxoi of the eastern Black Sea; the only other pre-Hellenistic mention appears to be Hekataios *fr.* 210 Jacoby (ap. Steph. Byz. s.v.).

<sup>49</sup> Cohen and Burke (1990), identifying Jupiter's

occultation of (or close conjunction with) a star in Gemini (*Mete.* 1.6.343b 30–32) as that of 5th December 337. The next latest date in *Mete.* is that of the archon Nikomachos, 341/0 BC (1.7.345a 1–2). The work had already been dated after 335 on other grounds (for example, Peretti (1979) 417, n.447, citing Jaeger (1955) 321, n.1).

<sup>50</sup> Aristotle uses *λογίζομαι*, as does PS in his first two continental summings-up (§§69, 106.4); *cf.* *λογισμοῦ* in the third (§111.8).

<sup>51</sup> Roller (2006) 64.

<sup>52</sup> Roller (2006) 64–66.

<sup>53</sup> As noted by Peretti (1979) 416–17.

Here Ps.-Skylax takes sides in a long-running debate about whether the seas south of Libyē were connected with each other and thus whether one could sail direct from the Red Sea to the Pillars of Herakles.<sup>54</sup> In taking this view, which he implies was not universally shared, he concurs not only with Herodotos but also with his contemporary Aristotle.<sup>55</sup> He may be responding to Herodotos or another early writer, and Aristotle may not yet have formulated his view when Ps.-Skylax wrote; but given that he is writing at a time when such things were being discussed, it seems likely that it is the current debate to which he is reacting.<sup>56</sup>

## II.2. Tides

Ps.-Skylax occasionally evinces an interest in tides. Few Classical authors refer to them, but among those who do the natural philosophers of his day feature strongly.<sup>57</sup> He refers twice to tides (§§1, 110.8) and once to islands being submerged (i.e. at high tide, §112.2). The transitive verb ἐπικλύζειν, ‘overflow’ (§112.2), which can also refer to submergence from other causes, is used in the fifth century by Euripides,<sup>58</sup> later by Ephoros (ca. 405–330),<sup>59</sup> then by Ps.-Skylax’s contemporaries Theophrastos<sup>60</sup> and the ethnographer Hekataios of Abdera (ca. 360 to ca. 290); then, among a slightly younger generation, by the explorer Megasthenes (ca. 350–290)<sup>61</sup> and the philosopher Zeno (335–263),<sup>62</sup> as well as in later sources. More remarkably, πλημμυρίδες, ‘flood tide’ (§1), and cognate words are used, before the third century, only by Ps.-Skylax’s older contemporaries Ephoros<sup>63</sup> and Herakleides Pontikos,<sup>64</sup> and then by Aristotle<sup>65</sup> and Theophrastos.<sup>66</sup> The term ἀνάπτωις, ‘ebb tide’ (§110.8), occurs elsewhere before the third century only in Pindar.<sup>67</sup> The Attic form ἄμπωις, however, is used by Herodotos<sup>68</sup> and then by Ps.-Skylax’s contemporaries Aristotle,<sup>69</sup> Theophrastos,<sup>70</sup> Herakleides,<sup>71</sup> Pytheas<sup>72</sup> and Dikaiarchos,<sup>73</sup> the last of whom has a theory of solar attraction to explain the tides.<sup>74</sup>

Thus, apart from two earlier poets and Herodotos, these terms are used, before the later hellenistic period, chiefly by authors of a philosophical or geographical character who are approximately coeval with Ps.-Skylax. This clustering is hardly surprising, given those writers’ interests (and the fragmentary preservation of the earlier natural philosophers), but given Ps.-Skylax’s date the shared terminology situates him firmly in their intellectual milieu.

## II.3. Hydrology

An interest in water supply is not a prominent feature of Ps.-Skylax, but it does make appearances and provides another point of contact with contemporary geography. We learn that the Egyptians drink water from Lake Mareia in Egypt (§107.1), whose people’s musical habits were of interest to Aristotle.<sup>75</sup> The Libyan Makai, whose hairstyle and armour feature in Herodotos,<sup>76</sup> are said to move their flocks inland when the waters of the Syrtis recede in summer (§109.3).

<sup>54</sup> On the debate about a possible land link between east Africa, or even west Africa, and India see, for example, Panchenko (2003) 280–81.

<sup>55</sup> Hdt. 4.42; *Mete.* 2.1.353b 35–354a 3; *cf.* 2.5.362b 28.

<sup>56</sup> PS’s description of Asia as convex (περιφερής, §106.4) may reflect similar debates.

<sup>57</sup> Especially Arist. *Mete.* 2.8.366a 18–20; *Dik. fr.* 127 M = *fr.* 114 W = Stobaeus *Anthologium* 1.38.2.

<sup>58</sup> Eur. *Tro.* 1326.

<sup>59</sup> *FGrHist* 70 F 65.

<sup>60</sup> *HP* 4.6.3; *Physicorum opiniones* 12 (*fr.* 30 Wimmer = *fr.* 184 Fortenbaugh = Philo Judaeus *De aeternitate mundi* 120.3 Cohn); *fr.* 171 Wimmer (not in Fortenbaugh et al. (1992)).

<sup>61</sup> *Fr.* 38c Müller.

<sup>62</sup> *Fr.* 105 von Arnim. *Cf.* also ἐπίκλυσις, Thuc. 3.89.3, 5.

<sup>63</sup> *FGrHist* 70 F 132.

<sup>64</sup> *Fr.* 117 W.

<sup>65</sup> As above (n.57); also *Mir. ausc.* 844a 28, though dated to the third century by Amiotti (1987) 48, n.18; *fr.* 246, 680 Rose; *FGrHist* 646 T 2a–b (on the Nile).

<sup>66</sup> *HP* 4.7.4–7; *Phys. opin.* l.c.; *fr.* 6 Wimmer (not in Fortenbaugh’s edition).

<sup>67</sup> *Pi. O.* 9.52.

<sup>68</sup> Hdt. 2.11, 7.198, 8.129.

<sup>69</sup> As above (n.57); also *Mir. ausc.* 844a 27, but see n.65 above; *Problemata* 933b 8; *fr.* 680 Rose.

<sup>70</sup> *HP* 4.7.4–5; *fr.* 6 Wimmer; *CP* 2.5.2.

<sup>71</sup> *Fr.* 117 W.

<sup>72</sup> Roller (2006) 64; *fr.* 2, 8 Mette.

<sup>73</sup> *Fr.* 114 W = *fr.* 127 M.

<sup>74</sup> Keyser (2000) 368–70.

<sup>75</sup> *Fr.* 319 Rose. L. Mareia is also mentioned by Hekataios *FGrHist* 1 F 25 (Diod. 1.68.5); Thuc. 1.104.4.175.

Rivers will naturally have featured in Ps.-Skylax's lost sources, just as they feature in known writers such as Hekataios and Herodotos. Occasionally, however, he treats rivers as more than demarcators of ethnic regions, but rather in a way that connects him with the debates about the composition of the *oikoumenē* that we see in the work of philosophers. Examples include the divisions between regions and continents: the Peneios is the terminus of 'continuous Hellas' (συνεχῆς Ἑλλάς, §§33.2, 66.1), the Strymon bounds Macedonia and Thrace (§§66.5, 67.1), the Istros (*Danube*) is the end of Thrace (§67.1, 9–10), the Tanais bounds Asia and Europe (§§68.5, 70) and the Kanopic mouth of the Nile divides Asia from Libyē (§106.3). Europe is characterized in terms of its greatest rivers, the Tanais, Istros and Rhodanos (§69), though the other two continents receive no such characterization. The partly corrupt passage about the Istros having a second mouth in the northern Adriatic (§20), plausibly reconstructed as a comparison with the Nile delta,<sup>77</sup> recalls Herodotos' placement of the Nile opposite the mouth of the Istros.<sup>78</sup>

Dikaiarchos makes the Nile flow eastwards through Africa from the Atlantic.<sup>79</sup> Ps.-Skylax, in the most lacunose passage of the text (§105.1), may describe it as flowing into Africa from either the Red Sea or the outer ocean.<sup>80</sup>

Ps.-Skylax comments that the outflow from the river Acheloös is turning islands into dry land (§34.3); here he may echo Thucydides rather than a source closer to his own time.<sup>81</sup> Similarly, Theophrastos mentions Cape Kirkaion as having been joined to the land by alluviation,<sup>82</sup> and both authors situate the Kirkaion in Latium. Ps.-Skylax's statement that the island of Leukas, conversely, has been separated from the mainland by the dredging of a channel (§34.1) reflects the same curiosity about the alteration of maritime landscapes.<sup>83</sup>

#### II.4. The Greek west

Theophrastos had a rather limited knowledge of Italy, and the early Peripatetics recorded curiosities about the non-Greeks of the peninsula under the general heading of νόμια βαρβαρικά.<sup>84</sup> Some fragments of these stories are proximate to disconnected asides in Ps.-Skylax's narrative.

(a) Herakleides Pontikos' reference to the Gauls' attack on Rome,<sup>85</sup> probably in 387 BC, recalls Ps.-Skylax's curiously allusive mention (§18) of the Keltoi of northeast Italy 'left over from the expedition'; clearly he expects his readers to know which expedition is meant. If these readers belonged to Athenian philosophical circles, they would probably know Herakleides' work.

(b) We noted earlier that both Ps.-Skylax and Theophrastos mention Sybaris as if it still exists. Fraser speculates that Theophrastos got his information from the Presocratic Menestor of Sybaris, which does not explain why he fails to update the report but at least makes it more understandable that Ps.-Skylax does not do so either. Generally, he seems to use sources for southern Italy that are a little out of date. Thus the short coastline of the 'Olsoi' (i.e. Volsci, §9) may reflect a date in the first half of the fourth century;<sup>86</sup> while elsewhere (§12) he omits to mention the Bruttii, who had formally become an *ethnos* in 356.<sup>87</sup>

<sup>77</sup> Shipley (2011) 105, ad loc.; Hansen (1879) 1–3.

<sup>78</sup> Hdt. 2.33–34.

<sup>79</sup> Fr. 126 M = fr. 113 W = Johannes Lydus *De mensibus* 4.107.

<sup>80</sup> ἔστιν ἐκ τῆς ἐρ[υθρᾶς θαλάττης] or less likely ἐκ τ. ἔξ[ωθεν θ.]. He is at least as likely to be talking about the Nile's origin as about the size of Arabia (as in Müller's reconstruction).

<sup>81</sup> Thuc. 2.102.

<sup>82</sup> HP 5.8.3; cf. Pliny 3.57.

<sup>83</sup> Cf. also Fraser (1994) 185.

<sup>84</sup> Fraser (1994) 186–87, cf. 188.

<sup>85</sup> Fr. 102 W = *FGrHist* 840 F 23.3.

<sup>86</sup> Shipley (2011) 96, ad loc. The short coastline of the Volsci in PS may reflect a stage in Roman expansion between the late fifth century and the Latin War (341–338); see Fabricius (1846); Marcotte (1986).

<sup>87</sup> Diod. 16.15.2; cf. Strabo 6.1.5.



(c) Herakleides (in the fragment just cited) wrongly calls Rome ‘a Greek city’ (πόλις Ἑλληνίς) and it has been suggested that he took his information from a *periplous*.<sup>88</sup> It was not the *periplous* of Ps.-Skylax, who mentions Rome without calling it Greek (§5); but the phrase is one he uses regularly to describe Greek cities located among non-Greeks, and may reflect the use of similar sources by himself and Herakleides.

(d) Theophrastos is among the earliest sources to mention the cult of Diomedes in the Adriatic, which seems to have spread rapidly in the fourth century even among non-Greeks.<sup>89</sup> Ps.-Skylax himself states that the non-Greek ‘Ombrikoï’ (Umbrians) worship Diomedes. His words ‘having received benefaction from him’ (εὐεργετηθὲν ὑπ’ αὐτοῦ, §16) suggest that he or his source was aware of the traditions that were now being elaborated in a literary form.

(e) Ps.-Skylax’s other disconnected references to the Homeric geography of the west (Elpenor’s tomb in Tyrrhenia, §8; Kalypso’s island off Lucania and Odysseus’ visit, §13.5) and of the Adriatic (Alkinoös in Korkyra, §22.1; Hyllos son of Herakles, founder of the Hylloï, §22.2; the stones of Kadmos and Harmonia, §24.2; Geryones’ oxen, §26.3) likewise connect him, directly or indirectly, with the philosophers’ interest in these regions as a zone of Greek–barbarian confrontation.<sup>90</sup>

### II.5. Flora (and fauna)

It seems hardly controversial to observe – though it does not appear actually to have been observed – that Ps.-Skylax’s unexplained *obiter dicta* about natural species, while few and scattered, place him in the same intellectual ambit as contemporary natural philosophers. Under Plato’s successor, Speusippos, the Academy conducted a programme of data collection about natural species; and it seems likely that even before Aristotle left Athens in *ca.* 347 he had, as a member of the Academy, begun those researches on living creatures which he would develop so spectacularly, in collaboration with Theophrastos, in the late 340s.<sup>91</sup>

Ps.-Skylax has something to say about animals. As well as the domestic animals of the Makai and the cattle of Geryones (above), he notes the flocks of the Arabes (§105.1) and those of the Gyzantes in what is now Tunisia (§110.9). In northwest Morocco he notes guinea-fowl (§112.1) and the animals, domesticated and wild, of the Aithiopes (§112.8–9).

He is more informative about plants, both natural and cultivated. The inhabitants of Bracheion Island (*Djerba*), for example, use lotus as food, make wine from it and grow olives, wheat and barley (§110.1, 4); vines are also grown in northwest Morocco (§112.11). Reeds, galingale and rushes are recorded at a lake in the same area (§112.1), while the broad seaweed off west Africa is sharp enough to cut one’s hand (§112.6). Most intriguing is the description of the Garden of Hesperides (§108.4), which is unlike any other passage:

ἔστι δὲ τόπος βαθὺς ὄργυιῶν ἡ΄, ἀπότομος κύκλω, οὐδαμοῦ ἔχων κατάβασιν· ἔστι δὲ δύο σταδίων πανταχῆ, οὐκ ἔλαττον, εὖρος καὶ μῆκος. οὗτός ἐστι σύσκιος δένδρεσιν ἐμπεπλεγμένοις ἐν ἀλλήλοις, ὡς ὅτι μάλιστα πυκνοτάτοις. τὰ δένδρα ἐστὶ λωτός, μηλέαι παντοδαπαί· ροαί, ἄπιοι, μεμαίκυλα, συκάμιννα, ἄμπελοι, μυρσίνα, δάφναι, κισσός, ἐλαίαι, κότινοι, ἄμυγδαλαί, καρύαι.

And it is a place 18 fathoms deep, sheer in a circle, nowhere having a descent; and it is of 2 stades every way, not less, width and length. This is shaded with trees woven in one another as densely as possible. The trees are lotus (and) fruit trees of all kinds: pomegranate trees, pear trees, arbutus fruits, mulberries, vines, myrtles, bay trees, ivy, olive trees, wild-olive trees, almond trees and nut trees.<sup>92</sup>

<sup>88</sup> Fraser (1994) 186–87.

<sup>89</sup> *HP* 4.5.6; Fraser (1994) 183–84.

<sup>90</sup> For Homeric geography, note also the references to Chryses (Troad, §95), Telephos (Lydia, §98.2), Andromeda (Phoenicia, §104.3) and Menelaos (Egypt, §106.5).

<sup>91</sup> See, for example, Ostwald and Lynch (1994) 610–11, citing Cherniss (1944) 44–48; Cherniss (1945) 31–59.

<sup>92</sup> For the species identifications, see Shipley (2011) 189, *ad loc.*

Whether or not such a variety of cultivated and wild trees could really grow together,<sup>93</sup> the passage surely shows Ps.-Skylax, as elsewhere, attempting to respond to the interest of, or whet the appetite of, philosophical colleagues to whom the collection of data about natural species was a very present concern.

Ps.-Skylax may be the earliest prose writer to mention wild olives (κότινοι, §110.4), noted not much later by Aristotle<sup>94</sup> and Theophrastos.<sup>95</sup> Other plants mentioned by him are, as one would expect, also noted by Theophrastos in his botanical works. One such is silphium in Cyrenaica,<sup>96</sup> which Ps.-Skylax says grows in γύαι (§108.2);<sup>97</sup> this unusual word for ‘fields’ may derive from earlier literary writings<sup>98</sup> rather than anything we might consider a navigational source, or may perhaps reflect a specialized cultivation technique.<sup>99</sup>

Only one of Ps.-Skylax’s observations about natural species does not refer to North Africa, but it is this one that connects him most closely to Theophrastos. In the middle of his ‘continuous Hellas’ passage (§§33–65), which is mostly devoid of non-topographical remarks, he comments that after Delphoi lies ‘Antikyra, a city, where the best hellebore treatments take place’. He does not elaborate. Theophrastos, too, links hellebore with Antikyra.<sup>100</sup>

Ps.-Skylax has not set out to assemble such information systematically; it remains tantalizingly dispersed through his text. He has, perhaps, lit upon it when it has caught his eye and thinks it worth including in order to meet certain expectations on the part of his readers.

## II.6. The Peloponnese and Crete

Cicero, in a letter of 50 BC to Atticus,<sup>101</sup> says he has asked the freedman and scholar Dionysius to check out Dikaiarchos’ statement that all Peloponnesians have maritime access. Cicero finds the claim surprising, because Dikaiarchos was ‘a most historical man’ (ιστορικώτατος)<sup>102</sup> and lived in the Peloponnese himself.<sup>103</sup> Cicero’s question to Dionysius is, in effect, a question about the Arkadians, since the other ethnic regions of the Peloponnese are transparently coastal. Dionysius has reported back, says Cicero, that ‘he thought that in Arcadia there was a certain coastal place called Lepreon’ (*Arcadiae censebat esse Lepreon quoddam maritimum*), thus confirming Dikaiarchos’ statement. Dikaiarchos must have been responding to the statement in the Catalogue of Ships that Agamemnon gave the Arkadians vessels ‘since the works of the sea were of no concern to them’ (ἐπεὶ οὐ σφι θαλάσσια ἔργα μεμύλει).<sup>104</sup> The only other Classical author who deals explicitly with Arkadian maritime access is our own Ps.-Skylax, who makes Arkadia extend to the sea at Lepreon (§44). This became true only around 369, when the Triphylian towns, of which Lepreon was the most important, joined the new Arkadian league. It remained true down to Dikaiarchos’ day and beyond, for although the league soon collapsed (probably in 362), so that Lepreon was no longer politically part of Arkadia, it retained an Arkadian geographical and cultural identity, as Polybios and Pausanias reveal.<sup>105</sup> Dikaiarchos

<sup>93</sup> Lin Foxhall (pers. comm.) advises me that they are suited to different altitudinal zones.

<sup>94</sup> *Gen. an.* 755b 11; *Hist. an.* 596a 25.

<sup>95</sup> Often in *HP*, for example 1.4.1; also *CP* 1.3.3, 1.6.10.

<sup>96</sup> *HP* 1.6.12, 3.1.6, 3.2.1, 4.3.1, 4.3.7, 6.3 *passim*, 6.5.2, 7.3.2, 9.1 *passim*; *CP* 1.5.1, 1.16.9, 3.1.4–5, 6.11.14–15, 6.12.8.

<sup>97</sup> The meaningless γύης of the ms. is plausibly emended to ἐν γύαις.

<sup>98</sup> Silphium is recorded as early as Solon (*fr.* 39 West).

<sup>99</sup> I owe this suggestion to David Mattingly.

<sup>100</sup> *HP* 9.9.2.

<sup>101</sup> *Cic. Att.* 6.2.3 (Dik. *fr.* 79 M).

<sup>102</sup> Or ‘extremely well informed’, Shackleton Bailey (1968) 135; but ‘most devoted to historical enquiry’, *Plut. Sert.* 9.5, tr. Perrin (1919) 25.

<sup>103</sup> Despite this and his writings on the Peloponnese, it appears reasonably certain that Dik. was from Sicilian Messana, not Peloponnesian Messene. *Suda s.v.* calls him Σικελιώτης ἐκ πόλεως Μεσσηνίας; he discusses Sicilian customs and language at *fr.* 106, 108–09 M = *fr.* 95, 94, 97 W.

<sup>104</sup> *Hom. Il.* 2.612–14. I owe this point to Louis Rawlings.

<sup>105</sup> Nielsen (1997) 129–32.

would naturally have known of Triphylia's involvement in the league, and perhaps also of Lepreon's subsequent Arkadian identity, and appears to have used this knowledge to update Homer's well-known identification of the Arkadians as an inland people.

Evidently, Dikaiarchos did not name Lepreon in the work Cicero consulted, which was not our *periplous* but the book *On the Descent into the Cave of Trophonios*.<sup>106</sup> Dionysius, in answering Cicero, either drew on his own knowledge or turned to another source, perhaps the *periplous*. As regards the intellectual context of the *periplous*, it is at least suggestive that Ps.-Skylax and Dikaiarchos are the only Greek authors known to have commented directly or indirectly on Arkadian access to the sea via Lepreon.

Ps.-Skylax names two towns in Crete that are mentioned by Peripatetic authors and hardly anywhere else in Classical sources: Prasos or Praisos, named twice by Theophrastos<sup>107</sup> and rarely elsewhere; and Pergamos, named only by Aristoxenos.<sup>108</sup>

### II.7. Famous people and peoples

Several legendary figures (as we would term them), besides those we mentioned earlier with reference to the West, appear momentarily: Medea at Aia in Kolchis (§81), Chryses in the Troad (§95), Telephos at Achaiōn Limēn in Lydia, formerly in Mysia (§98.1), and Menelaos' steersman Kanopos in Egypt (§105.6).

Besides Homer (born in Smyrna, §98.2; buried on Ios, §58.2), two historical personages make fleeting appearances. Referring to the island of Tenedos (§95), Ps.-Skylax mentions Kleostratos the astronomer (late sixth century?), whose home was there. The only other Classical author who mentions him is Theophrastos.<sup>109</sup> The other figure is from Ps.-Skylax's own day: Kallistratos 'the Athenian', a controversial general who founded a colony<sup>110</sup> in Aegean Thrace *ca.* 360 (§67.2) and was executed at Athens *ca.* 355.<sup>111</sup> We can only speculate about why he caught our author's attention, presumably in a source he consulted for information about Thrace. Perhaps he spotted his Athenian *ethnikon* and chose to include him as a point of interest to readers in Athens; or his attention was drawn to the rare phenomenon of a newly-founded *polis*.<sup>112</sup> Quite possibly, however, Kallistratos also had philosophical connections, as did other generals such as Chabrias and Phokion.<sup>113</sup> Kallistratos, indeed, is linked directly to Chabrias by their simultaneous election as generals in 378<sup>114</sup> and by the fact they were later charged with treason together.<sup>115</sup>

Ps.-Skylax's occasional inclusion of facts about barbarian peoples links him, as one would expect, to a range of earlier writers. Besides the Gyzantes and Makai (above), he knows of the 'great Aithiopes' (§1), who also appear in Herodotos and Aristotle;<sup>116</sup> of the sexual habits of Libyan women (§21.1); of a Mysian migration (§98.1); of the Arabes' domesticated animals (§105.1); and of the Lotus-eaters' diet (§110.1). He also dwells at some length on the customs of the 'sacred Aithiopes' (§112.5, 8–12).<sup>117</sup>

<sup>106</sup> For this work, see Dik. *fr.* 13–22 W; *fr.* 1.8a, 11a–c, 79–81 M.

<sup>107</sup> *HP* 3.3.4; *fr.* 113 Wimmer = Strabo 10.4.12. I thank James Whitley for directing me to Thphr. on this point.

<sup>108</sup> *Fr.* 44 Wehrli = Plut. *Lyc.* 31.4.

<sup>109</sup> *De signis tempestatum* 4.26 Sider = *fr.* 6.1.4 Wimmer. Sider and Brunschön (2007) 109, ad loc. suggest that Kleostratos could be early Hellenistic and still contemporary with Thphr.; but PS §67.2 dates him before Alexander's reign.

<sup>110</sup> Probably not Krenides, the later Philippoi: see Counillon (1998) 121.

<sup>111</sup> Lycurg. *Leoc.* 93.2.

<sup>112</sup> I owe this suggestion to Chris Pelling.

<sup>113</sup> Ostwald and Lynch (1994) 613.

<sup>114</sup> Diod. 15.29.7.

<sup>115</sup> Arist. *Rhet.* 1.7.1364a 19–23; *cf.* Swoboda (1919).

<sup>116</sup> Hdt. 3.20; Arist. *Pol.* 4.4.1290b 4–5.

<sup>117</sup> If *ἰεποὶ* in the ms. is correct.

### III. Authorship

With a philosophical context for Ps.-Skylax well established, the field is open for speculation as to the identity of the author. As we shall see, however, certainty is not attainable.

There is clearly common ground between Ps.-Skylax and philosophers:<sup>118</sup> both earlier Academics such as Herakleides Pontikos and those who became Peripatetics such as Aristotle, Dikaiarchos and Theophrastos. That is not to say that one of these well-known figures wrote the *periplous*. It offers no theories about ethnography or natural phenomena, and merely mentions interesting data that have caught the author's eye when they bear upon current debates of which he is aware. It is an undeveloped piece of research with irregularities and inconsistencies, and the differences in organization from the known work of the author's contemporaries are numerous.

In theory the completion of the work should precede the sack of Thebes, and thus Aristotle's return to Athens a few weeks afterwards; if so, it is not a Peripatetic work, strictly speaking, since that school was not yet founded.<sup>119</sup> It was probably not compiled by Aristotle before his return, as the adoption of an Athenian vantage-point would be hard to explain. If he, or indeed any other well-known writer, were the author one could legitimately ask how the work came to be separated from their corpus; though such a fate would be understandable if it was a juvenile effort later discarded or a preparatory study for another work.<sup>120</sup>

Pytheas may have had contact with the Peripatos, but is unlikely to be the author of the *periplous* given its Athenocentric outlook.

A better candidate, at first sight, is Herakleides Pontikos, who outlived Aristotle but was already a senior personage when he was acting head of the Academy<sup>121</sup> in 361/0; but the inconsistent and sometimes contradictory organization of the *periplous* makes it unlikely to be the work of a mature scholar. In any case, his interests do not overlap with Ps.-Skylax's *obiter dicta* so well as do those of Dikaiarchos, the strongest candidate for authorship.

Dikaiarchos' dates are a potential problem if the work dates from 338 to *ca.* 337, for his active years are usually placed in the last quarter of the fourth century, perhaps extending into the very early third.<sup>122</sup> Let us review the evidence, most of which we shall find inconclusive.<sup>123</sup>

(a) The *Suda*'s date of the 111th Olympiad (336–332 BC)<sup>124</sup> might imply that Dikaiarchos was born *ca.* 376, since in ancient writers a person's *floruit* sometimes marks their 40th year. Were that so, Dikaiarchos could certainly have been writing before 335. It would be unwise to place much weight on this evidence, however: the date coincides too neatly with Alexander's accession and is really the *floruit* of Aristoxenos, with whom Dikaiarchos is merely stated to be coeval.<sup>125</sup>

(b) Aristotle, on his death in 322, is said to have left behind Theophrastos, Aristoxenos and Dikaiarchos (among others and in that order) as his pupils.<sup>126</sup> This might imply that they were still relatively young, and also that Dikaiarchos was younger than Theophrastos (b. 372/1 or

<sup>118</sup> Peretti (1979) 417 notes Peripatetic 'echoes' in PS, even mentioning (at n.449) the Aristotelian title νομῶν βαρβαρικῶν; but he does not expand the point.

<sup>119</sup> Diog. Laert. 5.2 seems confused about the chronology, supposing Aristotle to have discovered on his return from an *Athenian* diplomatic mission to Macedonia that Xenokrates had been elected head of the Academy and then to have adopted the habit of teaching in the Lykeion instead. But Xenokrates' election is usually dated 339, when Aristotle was simply living in Macedonia and had been away for *ca.* eight years.

<sup>120</sup> Counillon (2007b) 42 theorizes that it is a groundwork for a history of Greece down to 338, but this is because of his tentative attachment to a date in the

310s.

<sup>121</sup> *Suda* s.v. Ἡρακλείδης Εὐφρονοῦ.

<sup>122</sup> I can find no discussion of Dik.'s chronology in Fortenbaugh and Schütrumpf (2000), other than by Ax ((2000) 279), who simply infers *ca.* 376 from *Suda*.

<sup>123</sup> Glucker (1998) at 311 (citing Wehrli (1967) 43) misrepresents Wehrli as saying that Dik. was born *ca.* 342. Wehrli only says that this is the latest possible date.

<sup>124</sup> Dik. *fr.* 3 M = *fr.* 2 W = *Suda* s.v. Aristoxenos.

<sup>125</sup> As at Cic. *Tusc.* 1.41.

<sup>126</sup> Dik. *fr.* 4 M = *fr.* 1, I W = anon. *Vita Aristotelis Latina* 46–47.

371/0). On the other hand, Aristotle (b. 384) need not have been his first teacher, and may have been called a teacher even before Plato's death in 348/7. He is thought to have taught Alexander the Great in about 342–340, when already aged over 40, and need not have waited until he founded his college in 335/4<sup>127</sup> to earn that title. (Censorinus includes Dikaiarchos in a very short list of philosophers of the 'Old Academy',<sup>128</sup> which may point to involvement with the Platonists before 335/4; but all other sources call him a Peripatetic, which suggests that his pupillage with Aristotle included part of the period 335–322 though it could have begun earlier.)

(c) Dikaiarchos mentions Lesbos in one of his works,<sup>129</sup> and it is theoretically possible that he worked there with Aristotle and Theophrastos in the late 340s.<sup>130</sup> On the other hand, he may have had other reasons to mention the island, for contacts between it and the Peripatos probably endured after Aristotle's visit.<sup>131</sup>

So far, nothing allows us to extend Dikaiarchos' career back into the early 330s with any confidence, but the possibility that he was writing then is left open. Other evidence points to the 320s as a period when he was writing, but not all of it is secure.

(d) Dikaiarchos, as we saw, probably refers to the Himalayas. This may mean he was in touch with members of Alexander's expedition (334–323); but he may simply have drawn upon the writings of the Archaic Skylax of Karyanda<sup>132</sup> or talked to travellers, before making his calculations of the length of the *oikoumenē*.

(e) More significantly, he criticizes the work of Pytheas, who seems to have made his voyage in about the 320s.<sup>133</sup>

(f) Most securely, in his lost work *On the Sacrifice at Ilion*, presumably referring to Alexander's entry into Asia Minor in 334, Dikaiarchos described an event that took place in Karmania during Alexander's return from the east. Plutarch's account of the same occasion shows that it belongs to the end of Alexander's expedition,<sup>134</sup> giving a *terminus post quem* of ca. 325 for Dikaiarchos' book. This is the only firm date for Dikaiarchos, other than the information (above) that he outlived Aristotle.

(g) Dikaiarchos' career would be extended towards the end of the fourth century if we had firm evidence that it was he who measured the difference in latitude between Syene (*Aswan*) and Lysimacheia in Thrace – a city not founded until 309/8 – using the difference in the angle of the sun's shadow at noon, like Eratosthenes a generation later. There is, however, no positive evidence to link him with this measurement.<sup>135</sup>

Thus far, the evidence proves conclusively only that Dikaiarchos was writing in ca. 325 or later and outlived Aristotle. If our earlier speculation that Aristotle employed Dikaiarchos' results in the *Meteorologika* is justified, Dikaiarchos was writing before 322. He is coupled with

<sup>127</sup> In Ol. 111.2; Diog. Laert. 5.10.

<sup>128</sup> *De die natali* 4.2–4 = Dik. fr. 53 M = fr. 47 W.

<sup>129</sup> Fr. 27 M = fr. 9 W = Cic. *Tusc.* 1.77.

<sup>130</sup> Diog. Laert. 5.9.8 dates Aristotle's arrival in Mytilene to Euboulos' archonship and to Ol. 108.4 (345/4), cf. Dion. Hal. *Ad Ammaeum* 5.13; accepted, for example, by Solmsen (1978) 467.

<sup>131</sup> Solmsen (1978) 471.

<sup>132</sup> On Skylax of Karyanda as having crossed India via the Indus and Ganges and travelled to Taprobane, see the convincing arguments of Panchenko (1998); (2002); (2003).

<sup>133</sup> Dik. fr. 124 M, see section II.1 above.

<sup>134</sup> Fr. 83 M = fr. 23 W = Athenaeus 13.80.603a–b; Plutarch *Alexander* 67.8. Dated to 326/5, Loeb edition of Diod. 16.105.7; to 324, *CAH*<sup>2</sup> vi.900, table.

<sup>135</sup> The exercise is not attributed to anyone by the

Roman-period author Kleomedes (*Caelestia* 1.5.57–62 Bowen–Todd), who reports it elliptically. Its connection to Dik. is accepted by Wehrli (1967) 77 (citing Berger (1880) 173–74), who thinks the figure of 300,000 is an advance on the 400,000 of Arist. *De caelo* 2.298a 17, taken from a contemporary mathematician (Eudoxos?), and must be earlier than Eratosthenes because of the 'primitive method' used; none of this, however, links the measurement directly to Dik. The measurement is linked to Dik. most recently by Keyser (2000) 361–65, dating the observation to 308–302 rather than 299 to ca. 281 on the grounds that only when Ptolemy and Lysimachos were allies could a scientist from one dynast's territory have worked in another's. There is, however, no reason to suppose travel was controlled in that way. Collinder (1964) is prepared (as an astronomer) to separate the observation from Dik.

Theophrastos,<sup>136</sup> but this could equally refer to the years after 322 as to an earlier time. At any rate, it is not impossible that Dikaiarchos was active by the early 330s, in which case the *periplous* could be an immature work of his.

Two apparent discrepancies between Ps.-Skylax and Dikaiarchos might be held to rule out their identification with one another, but the first is only apparent, the second inconclusive.

(a) The two have been portrayed as representative of different currents of thought: Ps.-Skylax as the descriptive geographer, Dikaiarchos as the scientific.<sup>137</sup> Since, however, we can now credit Ps.-Skylax with an interest in earth measurement and since it is far from certain that Dikaiarchos included maps in his work<sup>138</sup> there may be little or no clear blue water between them.

(b) Strabo remarks that Dikaiarchos and others (namely Eratosthenes, Polybios – both later than Dikaiarchos – ‘and most of the Hellenes’) located the Pillars of Herakles ‘around’ (περί) the straits of Gibraltar, whereas the ‘Iberians and Libyans in Gadeira’ (*Cádiz*) placed them further west.<sup>139</sup> This contradicts several of Ps.-Skylax’s contradictory statements about the Pillars (§§1, 2 and possibly 111.9), but not the passage in which he places the African Pillar at, or just west of, C. Abilyke on the south side of the strait and describes the Pillars as ‘the one in Libyē low and the one in Europe high’ (§111.6–7). These words sound like an accurate comparison between Mount Abilyke (*Monte Acho*) south of the strait and Mount Kalpe (*Gibraltar*) to the north. He is evidently using two or more sources, at least one of which agreed with his contemporary Dikaiarchos. It is possible that Dikaiarchos himself compiled these conflicting pieces of evidence when he wrote the *periplous*, and only later decided which was more credible.

Dikaiarchos actually has a spare title, *Gēs periodos*,<sup>140</sup> that would fit the *periplous*; it is the work in which he is said to have made the Nile flow from the outer ocean, as Ps.-Skylax may have done (above). The title also happens to match the only one, out of the four attributed to Skylax of Karyanda by the *Suda*, that could describe our *periplous*; but Dikaiarchos’ *periodos* is mentioned only once and by a late author. Conceivably Dikaiarchos annotated an existing *periplous* by adding his own observations – but we must not let speculation run riot and should resist the temptation to use fragmentary authors to whom a large number of lost works are attributed to ‘fill a gap in the more dubious reaches of *Quellenforschung*’.<sup>141</sup>

The case that Dikaiarchos wrote our *periplous* remains unproven. The essential point, however, is that the *periplous* – for all its shortcomings – can be firmly set in the ambit of the philosophical investigation taking place at Athens around 337 BC, with particular affinities to Dikaiarchos.

This conclusion may have implications for the ‘periplographic genre’ to which historians of Greek geography habitually refer.<sup>142</sup> In the first place, since Ps.-Skylax’s *periplous* is not an Archaic work updated later, then (if Hanno is Hellenistic rather than Archaic) the author is the earliest survivor of any such tradition. If he was also in fact the first *periplous* writer, he was the innovator and was therefore not writing generically.<sup>143</sup> On the other hand, as we saw, his sources may have included earlier, non-utilitarian *periploi*. Whether that body of lost work had a generic character is unknowable.

Limiting ourselves to the surviving works usually subsumed under the heading ‘periplographic’, we can see that the term ‘genre’ is scarcely applicable to such a diverse group. Only a few examples are needed in order to make the point. Ps.-Skylax is a researcher, not a navigator,

<sup>136</sup> Also in Dik. *fr.* 33 M = *fr.* 25 W = Cic. *Att.* 2.16.3.

<sup>137</sup> Marcotte (1986) 182.

<sup>138</sup> See Shackleton Bailey (1999) 134, n.3; followed by Mirhady on Dik. *fr.* 79, but ignored by Keyser (2000) 366–67, in the same volume, who takes *tabulae* as ‘maps’ without discussion.

<sup>139</sup> Strabo 3.5.5.

<sup>140</sup> *Fr.* 1.19 M = *fr.* 126, cited in n.79 above.

<sup>141</sup> Long (1980) 200.

<sup>142</sup> For example, González Ponce (1991) and later articles; Counillon (2001b) 16; more subtly, Marcotte (2000) lv–lxxii, especially lxiv–lxvi. Panchenko (2005) 179 regards PS as the originator of the *periplous* genre.

<sup>143</sup> Cf. Pelling (2007) 77–81, for the fluidity of ‘generic expectations’ in antiquity.

and writes mainly in the third person. Hanno's much shorter *periplous*, on the other hand, is in the first person and probably narrates a real voyage. The iambic poem of 'Pseudo-Skymnos' (late second century BC)<sup>144</sup> is a conceit presented to a king and covers the world in even less detail than Ps.-Skylax does. A work somewhat similar in conception to Ps.-Skylax's is the pseudo-Aristotelian *De mundo* (Περὶ κόσμου) of the late Hellenistic period, whose third chapter briefly lays out the seas and gulfs of the world, with the major islands and rivers, but does not adopt a consistently coastwise arrangement.<sup>145</sup> From the Roman period, we have some works with genuine navigational foundations, such as the *Periplus maris Erythraei* (PME),<sup>146</sup> Arrian's *Periplus of the Euxine*<sup>147</sup> and the *Stadiasmos*.<sup>148</sup> On the other hand, the later pseudo-Arrianic *Periplus of the Euxine* (usually known as *Eux.*)<sup>149</sup> is a compilation from earlier writings.

As well as the obvious differences of content and organization between these works, they appear to share none of the literary features – for example, in narrative construction, overall architecture or selection of content – that might amount to the sort of rules of composition we could regard as constitutive of a literary genre. The exception may be the very fact of coastwise arrangement, for which both Hekataios and Herodotos (especially the latter's fourth book)<sup>150</sup> offer precedents – as, presumably, did the now lost *periploi* on which Ps.-Skylax drew – but which is adopted to varying degrees and in different ways by the surviving authors. Beyond that, any intertextuality between these texts is almost entirely limited to the bare exposition of sometimes similar, even identical, facts and does not (as in, say, tragedy or the novel) invite us as readers to reflect on our knowledge of similar texts. It is unwise, therefore, to over-amplify the degree to which these authors were consciously writing in such a way as to invite comparison with one another.

A fragmentary work of a different kind extends further the range and variety of 'geographical' writing. The prose travelogue attributed to Herakleides Kritikos (*ca.* 270 BC)<sup>151</sup> is not a *periplous* but the exposition of a land journey from the Peloponnese to Thessaly. Nevertheless it has many points of contact with Ps.-Skylax, such as the exclusion (in some sense) of Macedonia from Hellas. It therefore represents an interesting comparison with Ps.-Skylax and other texts, as a spatial narrative with both an ideological agenda and comic features. Like Ps.-Skylax, it seems to stand outside considerations of genre, as far as as we can judge from surviving literature, but may be seen as a model for later Greek travel writing.<sup>152</sup>

Ps.-Skylax, himself in some ways a pioneer – if not in composing a coastal narrative, at least in amalgamating sea journeys into a holistic picture – surely meant his work as an addition to the philosophical corpus of works dealing with the form of the world, rather than to any tradition that integrated coastally-arranged exposition into a coherent and defined subset of literature. Given the interest of the Academy in the structure of the earth, and particularly that of the early Peripatetics in trying to gather hard data to support their theories on that question, we would do better to regard Ps.-Skylax not as a genre writer or even a very literary writer,<sup>153</sup> but – within limits – as an innovative scientific investigator.

<sup>144</sup> Marcotte ((2000) especially 35–46) suggests that Apollodoros wrote the anonymous work we misleadingly call Ps.-Skymnos (no ancient authority or manuscript attributes it to Skymnos; the suggestion is modern, and rejected).

<sup>145</sup> For the date, see Forster and Furley (1955) 337–41; Counillon (2001b) 20, n.34, citing Gottschalk (1987) 1131–38.

<sup>146</sup> Casson (1989); note the acute analysis by Parker (2001).

<sup>147</sup> Liddle (2003).

<sup>148</sup> Müller (1855) 427–514; Raschieri and Arnaud (forthcoming).

<sup>149</sup> Diller (1952) 102–46; Podossinov (2011).

<sup>150</sup> For example, Hdt. 4.16–40 (Skythia), 168–97 (Libyē).

<sup>151</sup> I follow Arenz (2006), not cited by McNerney (2008), who prefers 262–229 BC. The edition of Pfister (1951) is still useful.

<sup>152</sup> Pretzler (2009) 54, 62–63.

<sup>153</sup> Though see Shipley (2011) 18–21 for narratological and rhetorical features of the text.

**Bibliography**

- Amiotti, G. (1987) 'Cerne: "ultima terra"', in M. Sordi (ed.), *Il confine nel mondo antico* (Milan) 43–49
- Arenz, A. (2006) *Herakleides Kritikos, Über die Städte in Hellas: eine Periegeese Griechenlands am Vorabend des chremonideischen Krieges* (Munich)
- Arnaud, P. (1989) 'Pouvoir des mots et limites de la cartographie dans la géographie grecque et romaine', *DHA* 15.1, 9–29
- Ax, W. (2000) 'Dikaiarchs *Bios Hellados* und Varros *De vita populi Romani*', in W.W. Fortenbaugh and E. Schütrumpf (eds), *Dicaearchus of Messana: Text, Translation, and Discussion* (New Brunswick and London) 279–310
- Baschmakoff, A.A. (1948) *La Synthèse des périples pontiques: méthode de précision en paléo-ethnologie* (Paris)
- Berger, E.H. (1880) *Eratosthenes, die geographischen Fragmente* (Leipzig)
- Casson, L.B. (1989) *The Periplus Maris Erythraei* (Princeton)
- Cherniss, H.F. (1944) *Aristotle's Criticism of Plato and the Academy I* (Baltimore)
- (1945) *The Riddle of the Early Academy* (Berkeley)
- Cohen, S.M. and Burke, P. (1990) 'New evidence for the dating of Aristotle *Meteorologica* 1–3', *CPh* 85.2, 126–29
- Collinder, P. (1964) 'Dicaearchus and the Lysimachian measurement of the earth', *Sudhoffs Archiv* 48, 63–78
- Counillon, P. (1998) 'Datos en Thrace et le périple du Pseudo-Skylax', *REA* 100.1, 115–24
- (2001a) 'La description de la Crète dans le Périple du Ps.-Skylax', *REA* 103.3–4, 381–94
- (2001b) 'Les Cyclades chez les géographes grecs', *REA* 103.1–2, 11–23
- (2004) *Pseudo-Skylax, Le Périple du Pont-Euxin* (Bordeaux)
- (2007a) 'L'ethnographie dans le Périple du Ps.-Skylax entre Tanaïs et Colchide', in A. Bresson, A. Ivantchik and J.-L. Ferrary (eds), *Une koinè pontique: cités grecques, sociétés indigènes et empires mondiaux sur le littoral nord de la Mer Noire (VIIe s. a.C.–IIIe s. p.C.)* (Bordeaux) 37–45
- (2007b) 'Pseudo-Skylax et la Carie', in P. Brun (ed.), *Scripta Anatolica: hommages à Pierre Debord* (Bordeaux) 33–42
- Desanges, J. (1978) *Recherches sur l'activité des Méditerranéens aux confins de l'Afrique* (Rome)
- Dilke, O.A.W. (1985) *Greek and Roman Maps* (London)
- Diller, A. (1952) *The Tradition of the Minor Greek Geographers* (Lancaster PA and Oxford)
- (1975) 'Agathemerus, *Sketch of Geography*', *GRBS* 16.1, 59–76
- Euzennat, M. (1994) 'Le périple d'Hannon', *CRAI*, 559–79
- Fabricius, B. [pseudonym of H.T. Dittrich] (1846) 'Ueber den *Periplus* des Skylax: zweiter Abschnitt', *Archiv für Philologie und Paedagogik* 12.1, 5–85
- (1878) *Anonymi vulgo Scylacis Caryandensis periplus maris interni* (2nd edition) (Leipzig)
- Flensted-Jensen, P. and Hansen, M.H. (2007) 'Pseudo-Skylax', in M.H. Hansen (ed.), *The Return of the Polis: The Use and Meanings of the Word Polis in Archaic and Classical Sources* (Stuttgart) 204–42
- Forster, E.S. and Furley, D.J. (eds) (1955) *Aristotle, On Sophistical Refutations; On Coming-to-be and Passing Away; On the Cosmos* (London)
- Fortenbaugh, W.W., Huby, P.M., Sharples, R.W. and Gutas, D. (eds) (1992) *Theophrastus of Eresus: Sources for his Life, Writings, Thought and Influence* (2 vols) (Leiden, New York and Cologne)
- Fortenbaugh, W.W. and Schütrumpf, E. (eds) (2000) *Dicaearchus of Messana: Text, Translation, and Discussion* (New Brunswick and London)
- Fraser, P.M. (1994) 'The world of Theophrastus', in S. Hornblower (ed.), *Greek Historiography* (Oxford) 167–91
- Garzón Díaz, J. (1998–1999) 'La geografía antigua y Escilax de Carianda', *MHA* 19–20, 9–23
- Glucker, J. (1998) 'Theophrastus, the Academy, and the Athenian philosophical atmosphere', in J.M. van Ophuijsen and M. van Raalte (eds), *Theophrastus: Reappraising the Sources* (New York) 299–316
- González Ponce, F.J. (1991) 'Revisión de la opinión de A. Peretti sobre el origen cartográfico del *Periplo* del Ps.-Escilax', *Habis* 22, 151–55
- (2011a) '2038 Phileas von Athen', in H.-J. Gehrke (ed.), *Die Fragmente der griechischen Historiker* V.1 (Leiden)
- (2011b) '2208 Hanno von Karthago', in H.-J. Gehrke (ed.), *Die Fragmente der griechischen Historiker* V.1 (Leiden)



- Gottschalk, H.B. (1987) 'Aristotelian philosophy in the Roman world from the time of Cicero to the end of the second century AD', in *ANRW* 2.36.2, 1079–174
- Hansen, M.H. and Nielsen, T.H. (2004) *An Inventory of Archaic and Classical Poleis* (Oxford)
- Hansen, R. (1879) *Beiträge zu alten Geographen* (Sondershausen)
- Jaeger, W. (1955) *Aristoteles* (Berlin)
- Janni, P. (1982) 'Review of A. Peretti, *Il periplo di Scilace*', in *Athenaeum* 66, 602–07
- (1984) *La mappa e il periplo: cartografia antica e spazio odologico* (Rome)
- (1998) 'Cartographie et art nautique dans le monde ancien', in P. Arnaud and P. Counillon (eds), *Geographica historica* (Bordeaux and Nice) 41–53
- Keyser, P.T. (2000) 'The geographical work of Dikaiarchos', in W.W. Fortenbaugh and E. Schütrumpf (eds), *Dicaearchus of Messana: Text, Translation, and Discussion* (New Brunswick and London) 353–72
- Liddle, A. (ed.) (2003) *Arrian, Periplus Ponti Euxini* (London)
- Long, A.A. (1980) 'Review of H.B. Gottschalk, *Heraclides of Pontus*', in *CR* n.s. 32.2, 200–02
- Marcotte, D. (1986) 'Le périple dit de Scylax: esquisse d'un commentaire épigraphique et archéologique', *BollClass* 7, 166–82
- (1990) *Le Poème géographique de Dionysios, fils de Calliphon: édition, traduction et commentaire* (Lovanii)
- (2000) *Introduction générale; Ps.-Scymnos, Circuit de la terre* (Paris)
- McInerney, J.J. (2008) 'Herakleides Kritikos (369A)', in I. Worthington (ed.), *Brill's New Jacoby* (Leiden)
- Mirhady, D.C. (2000) 'Dicaearchus of Messana: the sources, text and translation', in W.W. Fortenbaugh and E. Schütrumpf (eds), *Dicaearchus of Messana: Text, Translation, and Discussion* (New Brunswick and London) 1–142
- Müller, C.W.L. (1855) *Geographi Graeci minores I* (Paris)
- Nielsen, T.H. (1997) 'Triphylia: an experiment in ethnic construction and political organisation', in T.H. Nielsen (ed.), *Yet More Studies in the Ancient Greek Polis* (Stuttgart) 129–62
- Oikonomides, A.N. and Miller, M.C.J. (eds) (1995) *Hanno the Carthaginian, Periplus or Circumnavigation [of Africa]* (3rd edition) (Chicago)
- Ostwald, M. and Lynch, J.P. (1994) 'The growth of schools and the advance of knowledge', in *The Cambridge Ancient History VI* (2nd edition) *The Fourth Century BC* (Cambridge) 592–633
- Panchenko, D.V. (1998) 'Scylax' circumnavigation of India and its interpretation in early Greek geography, ethnography and cosmography, I', *Hyperboreus* 4.2, 211–42
- (2002) 'Scylax in Philostratus' *Life of Apollonius of Tyana*', *Hyperboreus* 8.1, 5–12
- (2003) 'Scylax' circumnavigation of India and its interpretation in early Greek geography, ethnography and cosmography, II', *Hyperboreus* 9.2, 274–94
- (2005) 'Scylax of Caryanda on the Bosphorus and the strait at the Pillars', *Hyperboreus* 11.2, 173–80
- Parker, G. (2001) 'Porous connections: the Mediterranean and the Red Sea', *Thesis Eleven* 67.1, 59–79
- Pelling, C.B.R. (2007) 'Ion's *Epidemiai* and Plutarch's *Ion*', in V. Jennings and A. Katsaros (eds), *The World of Ion of Chios* (Leiden) 75–109
- Peretti, A. (1961) 'Eforo e Pseudo-Scilace', *SCO* 10, 5–43
- (1963) 'Teopompo e Pseudo-Scilace', *SCO* 12, 16–80
- (1979) *Il periplo di Scilace: studio sul primo portolano del Mediterraneo* (Pisa)
- Perrin, B. (ed.) (1919) *Plutarch, Sertorius and Eumenes; Phocion and Cato the Younger* (Cambridge MA)
- Pfister, F. (ed.) (1951) *Die Reisebilder des Herakleides: Einleitung, Text, Übersetzung und Kommentar mit einer Übersicht über die Geschichte der griechischen Volkskunde* (Vienna)
- Podossinov, A. (2011) '2037 Anonymi *Periplus Ponti Euxini*', in H.-J. Gehrke (ed.), *Die Fragmente der griechischen Historiker V.1* (Leiden)
- Pretzler, M. (2009) 'Travel and travel writing', in G.R. Boys-Stones, B. Graziosi and P. Vasunia (eds), *The Oxford Handbook of Hellenic Studies* (Oxford) 352–63
- Purves, A.C. (2010) *Space and Time in Ancient Greek Narrative* (Cambridge and New York)
- Ramin, J. (1976) *Le Périple d'Hannon/The Periplus of Hanno* (Oxford)
- Raschieri, A. and Arnaud, P. (forthcoming) '2049 Stadiasmos', in H.-J. Gehrke (ed.), *Die Fragmente der griechischen Historiker V.2* (Leiden)
- Roller, D.W. (2006) *Through the Pillars of Herakles: Greco-Roman Exploration of the Atlantic* (London and New York)

- Shackleton Bailey, D.R. (ed.) (1968) *Cicero's Letters to Atticus. III: 51–50 BC. 94–132 (Books V–VII. 9)* (Cambridge)
- (ed.) (1999) *Cicero, Letters to Atticus. II* (Cambridge MA and London)
- Shipley, D.G.J. (2004) 'Messenia', in M.H. Hansen and T.H. Nielsen (eds), *An Inventory of Archaic and Classical Poleis* (Oxford) 547–68
- (2010) 'Pseudo-Skylax on Attica', in N.V. Sekunda (ed.), *Ergasteria: Works Presented to John Ellis Jones on his 80th Birthday* (Gdańsk) 100–14
- (2011) *Pseudo-Skylax's Periplus: The Circumnavigation of the Inhabited World* (Exeter)
- with J. Nikolaus (forthcoming) '2046 [Skylax]', in H.-J. Gehrke (ed.), *Die Fragmente der griechischen Historiker* V.2 (Leiden)
- Sider, D. and Brunschön, C.W. (eds.) (2007) *Theophrastus of Eresus, On Weather Signs* (Leiden)
- Solmsen, F. (1978) 'The fishes of Lesbos and their alleged significance for the development of Aristotle', *Hermes* 106.3, 467–84
- Sundwall, G.A. (1996) 'Ammianus geographicus', *AJPh* 117.4, 619–43
- Swoboda, H. (1919) 'Kallistratos 1', *Paulys Realencyclopädie der classischen Altertumswissenschaft* X.2, 1730–35
- Talbert, R.J.A. (1987) 'Review of O.A.W. Dilke, *Greek and Roman Maps*', in *JRS* 77, 210–12
- (1989) 'Review of C. Nicolet, *L'Inventaire du monde*', in *AHR* 94.5, 1351
- Vossius, G.I. with A. Westermann (1838) *De historicis Graecis libri tres* (Lipsiae)
- Wehrli, F. (1967) *Dikaiarchos* (2nd edition) (Basel and Stuttgart)