

POSIDONIUS ON THE DRY WEST AND THE WET EAST: FRAGMENT 223 EK RECONSIDERED¹

It has long been recognized that Posidonius' fragment 223 EK presents a puzzle. Most commentators take this fragment to mean that Posidonius asserted that the western parts of the *oikoumene* are dry and the eastern (and India in particular) are wet because the former are more affected by the sun than the latter due to certain irregularity in the sun's diurnal motion.² This may be called the standard interpretation of F 223 EK.³ The problem with this interpretation is that the ideas which it ascribes to Posidonius are obviously incredible, not to say absurd. Attempts to avoid this absurdity invariably compel scholars either to leave some parts of Strabo's testimony unexplained or to resort to various unwarranted assumptions.

The aim of this study is to revisit the issue in order to find a more natural and consistent explanation of F 223 EK. The plan of the article is as follows. In section I it is argued that the standard interpretation of the fragment is not based upon Posidonius' own words, but is entirely dependent upon Strabo's biased reading of a brief and obscure statement of Posidonius torn out of its context. Starting from this general conclusion, I re-examine particular elements of Strabo's explanation separately. I argue that Strabo's explanation of Posidonius' statement is mistaken, at least, in three main points. (1) Posidonius in fact did not speak of the whole *oikoumene* (section III). (2) Nor did he speak of the diurnal motion of the sun from east to west, but rather of its annual motion in latitude (section IV). (3) The theory referred to by Posidonius had nothing to do with the idea of a universal climatic differentiation between east and west, but rather was the same theory, well known from the extant sources, by which he sought to explain the climatic difference between the equatorial zone and the subtropical (sections II and V). Finally, I suggest a new explanation of Posidonius' theory, in which it proves to be intelligible and perfectly consistent with his other geographical views (sections V–VII).

¹ I would like to thank D. A. Bratkin for his helpful criticisms of an earlier draft of this paper.

² M. Letronne (translation with commentary), *Géographie de Strabon* (Paris, 1819), 5.465–7; C. G. Grosskurd (translation with commentary), *Strabons Erdbeschreibung* (Berlin, 1834), 3.424–6; A. Forbiger, *Handbuch der alten Geographie* (Hamburg, 1877?), 1.362; K. Trüdinger, *Studien zur Geschichte der griechisch-römischen Ethnographie* (Diss. Basel, 1918), 123, n. 1; K. Reinhardt, *Poseidonios* (München, 1921), 65–7, 72, 86; id., 'Poseidonios 3', *RE* 22 (1953), 675f.; E. Honigsmann, 'Strabo 3', *RE* 4A (1931), 121; J. O. Thomson, *History of Ancient Geography* (Cambridge, 1948), 214; K. G. Sallmann, *Die Geographie des älteren Plinius in ihrem Verhältnis zu Varro. Versuch einer Quellenanalyse* (Berlin and New York, 1971) 73; W. Theiler (ed.), *Poseidonios. Die Fragmente*, vol. 2, *Erläuterungen* (Berlin and New York, 1982), 70; I. G. Kidd, *Posidonius*, vol. 2, *The Commentary* (Cambridge, New York, Melbourne, 1988), 802–4; I. V. Piankov, *Srednyaya Aziya v antichnoi geograficheskoi traditsii* (*Central Asia in Ancient Geographical Tradition*) (Moscow, 1997), 104; J. Desanges, 'De Timée à Strabon, la polémique sur le climat de l'Afrique du Nord et ses effets', in id., *Toujours Afrique apporte fait nouveau. Scripta minora* (Paris, 1999), 91.

³ This interpretation has been most fully worked out by K. Reinhardt and then, with some modifications, by A. Dihle and I. G. Kidd (see n. 2).

I. POSIDONIUS' STATEMENT AND STRABO'S EXPLANATION

At the end of *Geography* 17.3.9 Strabo remarks that the Mediterranean coast of Mauretania is a fertile country irrigated by many rivers (τὰ δ' ἐκεῖ πρὸς θαλάττῃ καὶ πεδία εὐδαίμονα ἔστι καὶ πόλεις πολλαὶ καὶ ποταμοὶ καὶ λίμναι).⁴ The next paragraph presents a digressive comment on this remark (17.3.10 C830 = *FGrH* 87 F 80 = F 223 EK = F 66 Theiler). This comment divides into two parts: the first which includes explicit references to Posidonius, and the second which does not.⁵ Let us begin with the first one:

Ποσειδώνιος δ' οὐκ οἶδ' εἰ ἀληθεύει φήσας ὀλίγοις καὶ μικροῖς διαρρεῖσθαι ποταμοῖς τὴν Λιβύην· αὐτοὺς γάρ οὓς Ἀρτεμίδωρος εἶρηκε — τοὺς μεταξὺ τῆς Λυγγὸς καὶ Καρχηδόνης — καὶ πολλοὺς εἶρηκε καὶ μεγάλους. ἐν δὲ τῇ μεσογαίᾳ ταύτ' ἀληθέστερον εἰπεῖν, εἶρηκε δὲ τούτου τὴν αἰτίαν αὐτός· μὴ γὰρ κατομβρεῖσθαι τοῖς ἀρκτικοῖς μέρεσι, καθάπερ οὐδὲ τὴν Αἰθιοπίαν φασί (διὸ πολλάκις λοιμικὰ ἐμπίπτειν ὑπὸ αὐχμῶν καὶ τὰς λίμνας τελμάτων πύμπλασθαι καὶ τὴν ἀκρίδα ἐπιπολάζειν). ἔτι φησί τὰ μὲν ἀνατολικά ὕγρὰ εἶναι —, τὸν γὰρ ἥλιον ἀνίσχοντα ταχὺ παραλλάττειν —, τὰ δ' ἐσπέρια ξηρά· ἐκεῖ γὰρ καταστρέφειν.

And I doubt the veracity of Posidonius when he said that Libya was irrigated by few and small rivers; for [these are] the same rivers, which Artemidorus (F A 77 Stihle) has spoken of—those between Lynx and Carthage—which he has called both many and large.⁶ It is more true to say of

⁴ For the latest edition of the text see S. Radt (ed. and tr.), *Strabons Geographika*, vol. 4, *Buch XIV–XVII* (Göttingen, 2005), 524, 526.

⁵ Cf. F. Schühlein, *Untersuchungen über des Posidonius Schrift ΠΕΡΙ ΩΚΕΑΝΟΥ I* (Freising, 1900), 1.34.

⁶ The sentence αὐτοὺς γάρ . . . εἶρηκε is omitted by most MSS, except EF (the major MSS for Books 10–17), and is probably corrupt. For, as Kidd (n. 2), 800 has rightly observed, this sentence is a piece of 'unclear, ambiguous and doubtful Greek', which is 'not only exceedingly clumsy Greek, but it verges on the incredible that the sentence began αὐτοὺς γάρ οὓς'; cf. also Schühlein (n. 5), 35f. The second oddity of this sentence is that it has two εἶρηκε, and the subject of the second εἶρηκε remains uncertain. To avoid these inconsistencies, Kidd proposes to emend αὐτοὺς into αὐτός, thus making Posidonius the subject of the second εἶρηκε. This conjecture entails that the point of Strabo's argument was to contrast two contradictory statements of Posidonius: that the rivers in Libya are few and small, and that they are many and large. But at the same time this conjecture creates a serious difficulty, because it makes nonsense of Strabo's reference to Artemidorus. One may wonder why Strabo should have appealed to Artemidorus only to note that he mentioned the same rivers as Posidonius, though this is irrelevant to Strabo's argument. On the contrary, Artemidorus is repeatedly cited by Strabo in the preceding paragraphs and, as has often been noted, may have been his principal authority for the description of the African coast and particularly the source for the mention of 'many and large' rivers at the end of 17.3.9: F. Strenger, *Strabos Erdkunde von Libyen*, in W. Sieglin (ed.), *Quellen und Forschungen zur alten Geschichte und Geographie* (Berlin, 1913), 28.88; W. Aly, *Strabonis Geographica*, vol. 4, *Untersuchungen über Text, Aufbau und Quellen der Geographica* (Bonn, 1957), 77–9; Kidd (n. 2, 1921), 799f.; id., *Posidonius*, vol. 3, *The Translation of the Fragments* (Cambridge, New York and Melbourne, 1999), 296, n. 266; K. Zimmermann, *Libyen. Das Land südlich des Mittelmeers im Weltbild der Griechen*, *Vestigia* 51 (München, 1999), 130. Hence it is legitimate to expect that the reference to Artemidorus in the quoted passage must have played a more important role in Strabo's argument than it does on Kidd's conjecture. It seems also that Strabo's argument would sound much more reasonable if its purpose was to contrast a statement by Posidonius with that by Artemidorus, rather than contrast two statements of Posidonius with a pointless reference to Artemidorus oddly sandwiched between them. If so, awkward as it stands, Strabo's text does make more sense without Kidd's conjecture than with it, and the most reasonable decision in this situation is to refrain from any emendations. To sum up, the subject of the second εἶρηκε is more likely to be not Posidonius, but Artemidorus, as most translators hold. For other possible but unfortunately even less convincing emendations of Strabo's clumsy sentence see also Schühlein (n. 5), 35f. N. Biffi, *L'Africa di Strabone. Libro XVII della Geografia: introduzione, traduzione e*

the interior. He has said the cause of this himself: that [Libya] is not rained on the northern parts, just as Ethiopia is not either, they say (for this reason, pestilences often befall through droughts, the lakes are filled with mud, and locusts are prevalent). He further says that the eastern areas are wet, for the rising sun passes by quickly, while the western areas are dry, because there it retires.⁷

Only three short phrases of this passage can be confidently taken as quotations from Posidonius, embedded in the context of Strabo's reasoning: Posidonius argued that only (1) *ὀλίγοις καὶ μικροῖς διαρρεῖσθαι ποταμοῖς τὴν Λιβύην*, because (2) *μὴ κατομβρεῖσθαι τοῖς ἀρκτικοῖς μέρεσι*, for (3) *τὰ μὲν ἀνατολικά ὕγρὰ εἶναι, τὸν γὰρ ἥλιον ἀνίσχοντα ταχὺ παραλλάττειν, τὰ δ' ἐσπέρια ξηρά, ἐκεῖ γὰρ καταστρέφειν*.⁸

Two points in the last phrase remain unclear: (1) what regions did Posidonius mean by *τὰ ἀνατολικά* and *τὰ ἐσπέρια*? and (2) what did he mean by the expressions *ταχὺ παραλλάττειν* and *καταστρέφειν*, as applied to the motion of the sun? These two puzzles taken together constitute a third and more difficult question: what kind of theory could lie behind Posidonius' cryptic statements, a theory that would be able to give a coherent explanation of how a reference to certain 'quick passing' and 'turning back' in the motion of the sun can be used to prove that the 'eastern' regions are wet and the 'western' are dry?⁹

One can see that the second part of Strabo's paragraph 17.3.10 is, in essence, his own attempt to answer these questions:

ὕγρὰ γὰρ καὶ ξηρά τὰ μὲν παρ' ὑδάτων ἀφθονίαν ἢ σπάνιν λέγεται, τὰ δὲ παρὰ τὴν τῶν ἡλίων βούλεται δὲ λέγειν τὰ παρὰ τοὺς ἡλίους· ταῦτα δὲ πάντες ἀρκτικοῖς καὶ μεσημβρινοῖς κλίμασιν ἀφορίζουσι. καὶ μὴν ἀνατολικά τε καὶ δυσμικά τὰ μὲν πρὸς τὰς οἰκῆσεις λεγόμενα καθ' ἐκάστην τὴν οἰκῆσιν καὶ τὴν μετάπτωσιν τῶν ὀριζόντων ἄλλα καὶ ἄλλα ἐστίν, ὥστ' οὐδ' ἔνεστι καθολικῶς εἰπεῖν ἐπὶ τῶν ἀπεριλήπτων τὸ πλῆθος ὅτι τὰ μὲν ἀνατολικά ὕγρὰ, τὰ δὲ δυσμικά ξηρά. ὥς δὲ λέγεται πρὸς τὴν οἰκουμένην ὅλην καὶ τὰς ἐσχατίας τὰς τοιαύτας οἷα καὶ ἡ Ἰνδικὴ καὶ ἡ Ἰβηρία, λέγοι ἂν, εἰ ἄρα, τὴν τοιαύτην ἀπόφασιν. τίς οὖν ἡ πιθανότης τῆς αἰτιολογίας; ἐν γὰρ περιφορᾷ συνεχεῖ τε καὶ ἀδιαλείπτῳ τοῦ ἡλίου τίς ἂν εἴη καταστροφὴ; τό τε τάχος τῆς παραλλαγῆς πανταχοῦ ἴσον. ἄλλως τε παρὰ τὴν ἐνάργειάν ἐστι τὰ ἔσχατα τῆς Ἰβηρίας ἢ τῆς Μαυρουσίας τὰ πρὸς δύσιν ξηρά λέγειν ἀπάντων μάλιστα· καὶ γὰρ τὸ περιέχον εὐκρατον ἔχει καὶ πλείστων ὑδάτων εὐπορεῖ. εἰ δὲ τὸ καταστρέφειν τοιοῦτον εἰληπταὶ ὅτι ἐνταῦθα ὕστατα τῆς οἰκουμένης ὑπὲρ γίγνεται, τί τοῦτο συντείνει πρὸς ξηρασίαν; καὶ γὰρ ἐνταῦθα καὶ ἐν τοῖς ἄλλοις τόποις τῆς οἰκουμένης τοῖς αὐτοκλινέσι τὸν ἴσον διαλιπὼν χρόνον, τὸν τῆς νυκτός, ἐπάνεισι πάλιν καὶ θερμαίνει τὴν γῆν.

commento (Modugno, 1999), 393, however, finds nothing surprising in Strabo's language being clumsy and vague, and sees no point in Kidd's conjecture as well. In any event, the main argument of the present article does not at all hang on whether we accept Kidd's conjecture or not.

⁷ Kidd's translation with minor alterations.

⁸ Compare the placement of the quotation marks in H. L. Jones' translation (Loeb Classical Library) and the commentary by Kidd (n. 2), 799f. The sentence *αὐτοὺς γάρ . . . καὶ μεγάλους* either came from Artemidorus, or, if we accept Kidd's emendation of *αὐτοὺς* to *αὐτὸς*, it represented Posidonius' own statement taken over from a different context and irrelevant to the present case. It has long been questioned whether the reference to Ethiopia (*καθάπερ οὐδὲ τὴν Αἰθιοπίαν φασί*) could be attributed to Posidonius (as argued by Schühlein [n. 5], 35), or whether it should be taken as Strabo's parenthetical remark: Letronne (n. 2), 465, n. 3; Grosskurd (n. 2), 424f., n. 3; R. Scheppegg, *De Posidonio Apamensi rerum gentium terrarum scriptore* (Diss. Halle, 1869), 43, n. 25; Kidd (n. 2), 800. The same is true for the next sentence about pestilences, lakes and locusts.

⁹ Kidd (n. 2), 802 has formulated these questions in a similar way: 'The problem concerns (i) whether the diurnal or annual path of the sun is in question, (ii) the reference to east and west, and (iii) the theory implied'.

For [regions] are called 'wet' or 'dry' by reason of either the abundance or scarcity of water, or [the abundance or scarcity] of the sun's rays; [Posidonius] means to speak of [the effects of] the sun; [but] everyone defines these effects by north and south *climata* [that is, by latitude rather than by longitude, to wit, not by east and west]. And really 'east' and 'west', when said in relation to *oikeseis* [that is, particular inhabited districts], vary with each [several] *oikesis* and the change of their horizons, so that it is also impossible to say without qualification, in view of the infinite number [of *oikeseis*], that the east is wet, the west is dry. But when it is said in relation to the *oikoumene* [that is, the whole inhabited world] and such of its extremities as India and Iberia, he could make, if at all, a statement like that. So, where is the plausibility in this aetiology? For in a continuous and unintermitting circle of the sun, what 'retirement' [or 'turning back'] of the sun could there be? And the speed of the 'passage' of the sun is everywhere equal. And apart from that, it is against clear observation to say that the extremities of Iberia and Maurusia, [that is, those] on the west, are most of all dry; for the atmosphere is temperate and abounds in a great deal of water. And if the 'retirement' [or 'turning back'] of the sun is taken in this way, that it is here that the sun is at the last point of the *oikoumene* above the earth, what does this contribute to dryness? For here, as well as in all other places of the *oikoumene* that are in the same latitude, the sun, leaving an equal interval of night, returns again and warms the earth.¹⁰

So, Strabo's answers to the three questions raised by Posidonius' statement may be formulated as follows: (1) τὰ ἀνατολικά and τὰ ἐσπέρια refer to the extremities of the whole *oikoumene*, such as India and Iberia; (2) ταχὺ παραλλάττειν and καταστρέφειν refer to the diurnal motion of the sun; (3) the underlying theory postulates a kind of climatic differentiation between east and west, which is determined by the influence of the sun and concerns the whole *oikoumene*. It is immediately apparent that what I have called the standard interpretation of F 223 EK in fact comes from this Strabonian commentary, and cannot be deduced directly from Posidonius' quotation to which this commentary is applied. Therefore the veracity of this interpretation is at least open to doubts. In what follows I argue that there are good reasons for such doubts.

Above all, Strabo's explanation of Posidonius' statement presents a real challenge to all commentators, because the theory it tends to ascribe to Posidonius verges on the absurd, at least, on two counts. First, it is obvious nonsense to postulate that the western parts of the *oikoumene* are more affected by the sun than the eastern. Second, the absurdity of this statement is aggravated by an even more incredible claim that the sun in its diurnal motion sometimes 'moves rapidly', and sometimes 'turns back'. It should be emphasized that the absurdity of both assertions was just as obvious to the ancient reader as it is to the modern one. In particular, we see that this absurdity is quite obvious to Strabo (cf. also 15.1.22 C695) who expressly refutes both ideas with perfectly valid arguments.¹¹

Here we are on the horns of the dilemma: either to accept Strabo's interpretation of Posidonius' statement, because it is the only testimony we possess (and thereby to admit that Posidonius, for all his merits, has fallen into utter ignorance in this case), or to reject this interpretation as inconsistent with common sense and to look for other ways to explain Posidonius' statement. In either case, it is clear that Strabo has lost sight of some crucial element in Posidonius' argumentation. It seems impossible to reconcile all elements of Strabo's interpretation with one another, but our task is merely to find the simplest and most natural way to separate the elements which can be counted as true from those that cannot.

¹⁰ Translation is based on that of Kidd, altered at some points.

¹¹ Cf. similar evaluation of Strabo's arguments: Strenger (n. 6), 89; Dihle (n. 2), 107; Theiler (n. 2), 70.

Most commentators choose to support the Strabonian side of this dilemma. But their opinion rests entirely on the assumption that Strabo's commentary presents a paraphrase of Posidonius and hence is a legitimate source of aid in understanding Posidonius' statement to which it is appended. But is it true?

There are good reasons for a negative answer. In what follows I argue that Strabo's interpretation of Posidonius' statement not only goes against common sense, but the possibility of ascribing this interpretation to Posidonius is contradicted by the internal logic of Strabo's own argument.

Let us take a closer look at the text. Strabo's commentary consists of three parts. Each part has as its starting point a reference to a certain pair of words taken from the preceding sentence which we have identified as a quotation from Posidonius: (1) *ὕγρὰ* and *ξηρὰ*; (2) *τὰ ἀνατολικά*; and *τὰ ἐσπέρια*; (3) *παράλλαγή* and *καταστροφή*. Then, in each part Strabo's reasoning proceeds in two steps: first, he points out possible senses in which these words could be used *in principle*, and next he sets out the objections that can be raised against Posidonius' statement, *provided* that Posidonius used these words in these particular senses. The nature and origin of these senses are revealed by the fact that they are all introduced by impersonal *λέγεται*, *λεγόμενα*, *λέγειν*, *εἰληπται*, often presented either in the form of questions, or as conditional sentences, and never supported by direct references to Posidonius.

What are we to make of such features of Strabo's explanation? The following hypothesis suggests itself. (1) *ὕγρὰ* and *ξηρὰ*, *τὰ ἀνατολικά* and *τὰ ἐσπέρια*, *παράλλαττειν* and *καταστρέφειν* are genuine words of Posidonius,¹² and therefore the whole sentence they belong to is a more or less verbatim quotation. (2) Strabo does not know precisely what Posidonius means by the words *τὰ ἀνατολικά* and *τὰ ἐσπέρια*, *παράλλαττειν* and *καταστρέφειν*. Therefore (3) what Strabo offers his readers is no more than his own attempt to explain them, which has no bearing on what Posidonius really had in mind.

What is even more important, most commentators on F 223 EK fail to take account of a great divide between Strabo's aims and approaches and theirs. Whereas Strabo puts forward his explanation only to refute Posidonius' statement as making no sense,¹³ modern commentators, by contrast, accept this explanation hoping to make sense of Posidonius' statement and thus to save an important piece of his *œuvre*. With this in mind, it seems hardly legitimate to take Strabo's account as a credible source for Posidonius' theory in F 223 EK. One may say rather that, in refuting his own explanation of Posidonius' statement, Strabo makes his case so forcefully that it seems that the best we can do is simply to agree with his arguments and thus to admit that Posidonius really could not claim that (1) the influence of the sun depends on longitude, (2) and that the sun in its diurnal motion sometimes 'passes over quickly' and sometimes 'turns back'.

¹² Similarly Reinhardt (n. 2, 1921), 66.

¹³ In such handling of Posidonius' statement Strabo employs his standard strategy of refutation—a reduction of his opponent's words, taken out of its context, to absurd contradictory consequences. I can point out at least five notable examples of his use of this method: (1) against Eratosthenes' claim that the Gulf of Issus is *εὐθινώτατος* (1.3.2 C47); (2) against Eratosthenes' expression *οἱ ἀρχαιοτάτοι* applied to ancient travellers (1.3.2 C48); (3) against Eratosthenes' expression *τὸ συνάπτειν* applied to the Mediterranean and the Red Sea (1.3.13f. C56); (4) against Hipparchus' reasoning about the latitude of India (2.1.11 C71); (5) against Hipparchus' statement about the longitude of Thapsacus with respect to that of Babylon (2.1.38 C90f.). The fourth example has been analysed in my recent paper, 'Hipparchus on the latitude of southern India', *GRBS* 45 (2005), 359–80.

To conclude: the received interpretation of F 223 EK is basically no more than Strabo's explanation of Posidonius' single statement torn out of its context. Strabo's explanation does not rest on Posidonius' words, and, on the contrary, seeks to reduce Posidonius' statement to absurdity. In the next sections I shall argue that Strabo's interpretation is not only unsubstantiated and biased, but is simply mistaken. Our analysis follows the order of Strabo's commentary, and each of the next three sections considers a pair of Posidonius' expressions which Strabo attempts to explain: ὕγρα and ξηρά, τὰ ἀνατολικά and τὰ ἐσπέρια, παραλλάττειν and καταστρέφειν.

II. 'ΥΓΡΑ ΚΑΙ ΞΗΡΑ: WHAT IS WRONG WITH STRABO'S EXPLANATION?

Strabo makes Posidonius claim that the sun causes a climatic differentiation between east and west. But it is obvious that the influence of the sun on the climate depends only on latitude and not on longitude. One is tempted to save Posidonius from this incredible claim. There are two ways to solve this problem: either to get rid of Strabo's assertion that the sun was *the only* cause of climatic differentiation in Posidonius' theory, or to suppose that in fact Posidonius spoke of something other than a difference between east and west.

H. Berger, A. Dihle, W. Theiler and I. G. Kidd have opted for the first possibility, suggesting different explanations of how Posidonius could claim that the east is wet and the west is dry without restricting this to the influence of the sun only.¹⁴ Kidd's remark is an apt expression of the common premise underlying these attempts: 'Strabo restricts Posidonius in this fragment to sun; but his account *almost certainly* combined the interrelation of sun, wind and rain' (my italics).¹⁵

But I have to admit that I see no grounds for this 'almost certainly'. The fact remains that in F 223 EK, as we have it, it is Posidonius who *distinctis verbis* relates the 'wetness' and the 'dryness' to the influence of the sun, viz. to its 'quick passages' and 'retirements'. All that Strabo does by saying that Posidonius βούλεται δὲ λέγειν τὰ παρὰ τοὺς ἡλίους is merely to reformulate this idea more explicitly. It is true that the reliability of Strabo's interpretation of Posidonius' words in F 223 EK is questionable in many respects, but the balance of the evidence suggests that in the present case we can give credence to his account with much greater confidence than in all others, as I discuss below.

¹⁴ H. Berger, *Geschichte der wissenschaftlichen Erdkunde der Griechen* (Leipzig, 1903²), 554 supposed that actually Posidonius was speaking of the Aristotelian theory that the moisture evaporated by the sun condenses only after the sun goes away to the west (*Mete.* 1.9 346b–347a), so that in eastern regions it always starts to rain earlier than in western. In Berger's view, Strabo may have erroneously deduced from this theory that the east must be wetter than the west. This assumption has been supported by Strenger (n. 6), 89; but rightly criticized by Schühlein (n. 5), 36. Dihle (n. 2), 106f. suggested that Posidonius' theory could have been based upon a well-known fact that the western sides of hills or buildings are more heated by the sun than the eastern ones. Posidonius could have simply extrapolated this observation to the whole *oikoumene*. Theiler (n. 2), 70 pointed to another fact that could have been the basis of Posidonius' theory. It was generally held in antiquity that the sun comes to the eastern parts of the *oikoumene* after having passed over the ocean, and, by contrast, it was supposed to pass a long way over the land before rising in the western parts. In Theiler's view, Posidonius could have supposed that the eastern regions are wetter because the sun's heat is mitigated by the ocean. Unfortunately, none of these assumptions is supported by the sources.

¹⁵ Kidd (n. 2), 802f. But Reinhardt (n. 2, 1921), 66f.; id. (n. 2, 1953), 675f., on the contrary, emphasized that Posidonius must have spoken of the influence of the sun only.

Hence, we are left with the second of the two mentioned alternatives: the main point of Posidonius' theory was not the longitudinal climatic difference. This possibility will be dealt with in the following sections, and, I shall argue, it will lead us to a more consistent explanation of F 223 EK.

III. ΤΑ 'ΑΝΑΤΟΛΙΚΑ ΚΑΙ ΤΑ 'ΕΣΠΕΡΙΑ

To repeat, Strabo's interpretation maintains that by τὰ ἀνατολικά and τὰ ἐσπέρια Posidonius referred to the eastern and western parts of the *oikoumene*, such as India and Iberia. Most commentators,¹⁶ even those who reject some other elements of Strabo's interpretation, accept this thesis, though not without qualifications. Thus, K. Reinhardt, on one hand, tends to universalize the alleged Posidonian theory, suggesting that it dealt not only with the extremities of the *oikoumene*, but with all other localities lying between them as well, so that of any two places lying in the same latitude the western one was supposed to be drier than the eastern.¹⁷ On the other hand, Kidd limits the scope of this theory to postulating the east-west climatic difference within the subtropical zone only, primarily between India and Ethiopia.¹⁸

On the contrary, I suppose and hope to show in this section that not only is Strabo's interpretation of the terms τὰ ἀνατολικά and τὰ ἐσπέρια contradicted by common sense,¹⁹ but the possibility of ascribing this interpretation to Posidonius is flatly ruled out by Strabo's own words.

First of all, it should be emphasized that neither the *oikoumene*, nor India and Iberia, are mentioned in Posidonius' statement quoted by Strabo, but they all appear only in Strabo's commentary on it. Still more explicit is the context in which Strabo suggests his identification of τὰ ἀνατολικά and τὰ ἐσπέρια. First, he points out two possible senses in which these terms may be used: either (1) in relation to certain particular localities (αἱ οἰκησεις); or (2) in relation to the whole known world (ἡ οἰκουμένη). He rejects the first possibility on the ground that each particular locality has its own east and west, and it is impossible to say that for every locality the west is dry and the east is wet. After this Strabo turns to the second possibility:

ὥς δὲ λέγεται πρὸς τὴν οἰκουμένην ὅλην καὶ τὰς ἐσχατίας τὰς τοιαύτας οἷα καὶ ἡ Ἰνδικὴ καὶ ἡ Ἰβηρία, λέγοι ἂν, εἰ ἄρα, τὴν τοιαύτην ἀπόφασιν.

(for the translation see section I)

It follows from these words that, even if we accept Strabo's interpretation of Posidonius' statement, the most we can credit Posidonius with is speaking of two separate regions, such as India and Iberia, rather than of a universal law that is equally valid for every part of the *oikoumene*, as Reinhardt supposed.

But many features of the quoted text make it clear that the mention of the *oikoumene*, let alone India and Iberia, must have belonged to Strabo himself, rather than to Posidonius, and Strabo makes no secret of this. The optative λέγοι ἂν signals that the most that Strabo is ready to grant is only that Posidonius *could have* used the words τὰ ἀνατολικά and τὰ ἐσπέρια in relation to the *oikoumene*. But the phrase εἰ

¹⁶ See n. 2.

¹⁷ Reinhardt (n. 2, 1921), 65; followed by Thomson (n. 2), 214. Cf. also Berger (n. 14), 554.

¹⁸ Kidd (n. 2), 803f.: 'This *indeed must have been* Posidonius' context...', 804: 'He was *clearly* referring to the EW differentiations of the subtropical klima'; 'Posidonius' context was *clearly* the intercontinental EW difference, along the single sub-tropical klima' (my italics).

¹⁹ On this see Berger (n. 14), 554; Strenger (n. 6), 88f.

ἄρα emphasizes Strabo's doubts that this was really the case. Furthermore, the connection between the reference to Posidonius and the mention of India and Iberia is not direct, but is mediated twice: first by the reference to common opinion (*ὡς δὲ λέγεται*), by which *ἡ οἰκουμένη* is introduced, and then by the parenthetical position, subordinated to this reference, in which Strabo has placed the mention of India and Iberia. It is crucial to note here that in Strabo's *Geography* India and Iberia are the standard references to the eastern and western extremities of the *oikoumene*.²⁰

All this renders it most probable that the only genuine words of Posidonius in Strabo's statement are the odd expressions *τὰ ἀνατολικά* and *τὰ ἐσπέρια*, and it is their ambiguity that has prompted Strabo to interpret them as a reference to the extremities of the whole *oikoumene*. The mention of India and Iberia is most likely to have been added by Strabo as well in order to specify what countries could be meant here in his opinion. We may conclude therefore that India and Iberia, as well as the *oikoumene*, are irrelevant to what Posidonius really implied.²¹ Last but not least, this conclusion agrees with the observation made by Letronne and Kidd that the mention of Iberia as an arid country could hardly belong to Posidonius, who himself visited this region and recognized its fertility and rivers (F 224 EK = *FGrH* 87 F 49 = Strabo 3.3.4 C153).²²

But, as a matter of fact, when modern commentators²³ claim that Posidonius has postulated a kind of climatic differentiation between east and west, their opinion rests not so much on their reading of F 223 EK as on two other testimonies—another fragment of Posidonius (F 49 EK = Strabo 2.3.7 C102–103) and a passage of Diodorus (2.53.4) supposedly based on Posidonius.²⁴ Both texts speak of a climatic difference between eastern and western countries, India and Ethiopia in particular, and declare that the former are more fertile than the latter.

In F 49 EK Posidonius discusses weak and strong points of the traditional division of the *oikoumene* into three continents. Its weak point, in his opinion, is that this division fails to take account of the climatic difference between north and south. But

²⁰ *Geogr.* 1.1.8 C5; 1.4.5 C64; 1.4.6 C65; 2.5.1 C109; 2.5.9 C116.

²¹ M. Letronne and C. G. Grosskurd understood the import of Strabo's words in the same way, but the conclusion they drew from this understanding was totally different. They were convinced that (1) by *τὰ ἀνατολικά* and *τὰ ἐσπέρια* Posidonius really meant India and Iberia thus postulating a sort of climatic east–west differentiation for the whole *oikoumene*, and that (2) the main point of Strabo's objections to Posidonius was to prove that it is impossible to postulate such a difference for the whole *oikoumene*. No wonder that Letronne and Grosskurd have found Strabo's statement to be inconsistent with these premises; see Letronne (n. 2), 466, n. 2: 'c'est le contraire que Strabon devoit dire'; Grosskurd (n. 2), 426, n. 6: 'sagt sie gerade das Gegenteil dessen, was Strabo sagen muss und will'. In order to bring Strabo's statement into accord with these premises, Letronne and Grosskurd argued for a radical emendation of the text, so as to render it as follows. Letronne (n. 2), 466, n. 2: 'Et ce qui est dit (par Posidonius) *des extrémités, telles que l'Inde et l'Ibérie*, pourrait d'être également, du moins dans cette hypothèse, de toute la terre habitable; et, dans ce cas, où est la vraisemblance de son opinion!' Grosskurd (n. 2), 426f.: 'Aber auch auf die ganze Wohnwelt bezogen und solche Enden, als Iberia und Indike, kann es, wenigstens unter solcher Erklärung, [nicht] behauptet werden.' If, unlike Letronne and Grosskurd, one wishes to make sense of Strabo's statement as it stands, he has to admit that (1) it was not Posidonius, but Strabo, who introduced the reference to the *oikoumene*, India and Iberia, and (2) Strabo's aim was to show that Posidonius' statement could have been intelligible only if by *τὰ ἀνατολικά* and *τὰ ἐσπέρια* he referred to these countries.

²² Letronne (n. 2), 467, n. 1; Kidd (n. 2), 804, followed by Biffi (n. 6), 394.

²³ Reinhardt (n. 2, 1921), 65; id., (n. 2, 1953), 675f.; Honigsmann (n. 2), 121; Dihle (n. 2), 98f.; Theiler (n. 2), 70; Kidd (n. 2), 803f.

²⁴ As argued by Reinhardt (n. 2, 1921), 127ff.

then he emphasizes that there is also a considerable difference between eastern and western countries lying in the same latitude, and the traditional system allows one to take account of this fact by assigning such countries to different continents:

When praising the sort of division of continents as is now held, Posidonius uses as an example the fact that Indians differ from the Libyan Ethiopians (although being on the same latitude); for he says, Indians are more developed physically, less burnt by the dryness of the atmosphere (*ἡττον ἐψέσθαι τῇ ξηρασίᾳ τοῦ περιέχοντος*). (trans. Kidd)

The same idea is repeated by Diodorus with more details:

... the birds ... became ... of varied colour because of the influence of the sun, this being true in the lands which lie close to the sun. And the same reasoning applies also to all other countries of the earth which lie in a similar climate (*κατὰ τὴν ὁμοίαν κρᾶσιν*), such as India and the Red Sea and Ethiopia and certain parts of Libya. But the eastern part, being more fertile, breeds more nobler and larger animals (*τῆς μὲν πρὸς ἀνατολὰς κεκλιμένης πιωτέρας οὔσης*); and as for the rest of Libya, each animal is produced in form and characteristics corresponding to the quality of the soil. Likewise as regards trees, the palms of Libya bear dry and small fruit, but in Coele-Syria dates called *caryoti* are produced which excel as to both sweetness and size and also as to their juices. But dates much larger than these can be seen growing in Arabia and Babylonia. (tr. C. H. Oldfather, Loeb Classical Library)

It is primarily on the strength of these two passages that Reinhardt, Dihle, Theiler and Kidd accept Strabo's interpretation of Posidonius' statement about *τὰ ἀνατολικά* and *τὰ ἐσπέρια* in F 223 EK in that this statement is supposed to refer to 'the intercontinental EW difference, along the single sub-tropical klima, and in particular the common problem of racial differentiations between Indians and Africans'.²⁵

But—and this is a big but—there is a substantial difference between Posidonius' statement and the views presented in these two passages. Whereas in F 223 EK Posidonius claims that the only factor responsible for the intercontinental east–west difference is the influence of the sun, in fragment 49 EK and in Diodorus' account, there is not a single word about the sun in this connection, let alone any 'quick passing' or 'retirement' in its motion. Quite the contrary. The expressions *ἐψέσθαι τῇ ξηρασίᾳ τοῦ περιέχοντος* in F 49 EK and *πιωτέρας οὔσης* in Diodorus refer rather to what Strabo has called *ὕγρα γὰρ καὶ ξηρά . . . παρ' ὑδάτων ἀφθονίαν ἢ σπάνιν*, to wit, to the influence of water supply, and not of the sun.²⁶ This being so, I see no sufficient reason to link these two passages with Posidonius' statement in F 223 EK.²⁷

²⁵ Kidd (n. 2), 804.

²⁶ So too Dihle (n. 2), 98; Kidd (n. 2), 802.

²⁷ Dihle (n. 2), 105f. argues that an additional link between Posidonius' remark on the difference between Indians and Ethiopians in F 49 EK and his theory in F 223 EK is suggested by the emendation which Posidonius proposed to the text of *Od.* 1.24. Posidonius refers to this verse immediately after the remark on Indians and Ethiopians in F 49 EK. According to Homer, there are two groups of Ethiopians: *οἱ μὲν δυσσομένον Ὑπερίονος, οἱ δ' ἀνιόντος*—'some where Hyperion sinks, some where he rises'. Posidonius introduces an odd conjecture *ἡμὲν ἀπερχομένον Ὑπερίονος, ἡδ' ἀνιόντος* thereby contributing to the long-lasting debates about the meaning of this Homeric verse. As Strabo makes clear, Posidonius' point was to show that Homer split Ethiopians into two parts precisely because he was aware of the climatic difference between India and Ethiopia that Posidonius is speaking of. The emendation was designed to reinforce this point. Dihle takes a step further and assumes that by this emendation Posidonius attempted to bring Homeric verse into accord with his supposed theory of longitudinal climatic differentiation. In particular, Dihle argues that Posidonius construed the

On the other hand, the testimonies of F 49 EK and Diodorus 2.53 can be easily accounted for without linking them to F 223 EK. As A. Dihle has convincingly shown, the idea that India is similar to Ethiopia, but surpasses it in wetness and fertility, had a long history before Posidonius and was widely recognized. Aristotle (F 284 = Strabo 15.1.22 C695), Onesicritus (*FGrH* 134 F 7, 22 = Strabo 15.1.13, 24 C690, 695–6), Eratosthenes (F III B 12 Berger = 15.1.13 C690), and Strabo himself (15.1.22 C695) discussed this subject and were unanimous in taking water as the main cause of the greater fertility of India, as compared with Ethiopia. One can see that against the background of this evidence, F 49 EK and Diodorus 2.53 contain nothing new and unusual, nothing which would allow one to bring them in line with F 223 EK.

To sum up: the above analysis leads us to the conclusion that Posidonius did not link the terms τὰ ἀνατολικά and τὰ ἐσπέρια to the eastern and western parts of the *oikoumene*, let alone India and Iberia. In sections V and VI we shall return to the question of what regions he could really have had in mind.

IV. ΠΑΡΑΛΛΑΤΤΕΙΝ ΚΑΙ ΚΑΤΑΣΤΡΕΦΕΙΝ

Most critics have taken the words τὰ ἀνατολικά and τὰ ἐσπέρια, construed as a reference to the extremities of the *oikoumene*, to be a clue to understanding the whole fragment 223 EK. It is primarily on the basis of this construal that they identify the main point of Posidonius' theory as postulating a kind of longitudinal climatic differentiation, and hence refer παραλλάττειν and καταστρέφειν to the diurnal motion of the sun.²⁸

On the contrary, in this section I argue that it is παραλλάττειν and καταστρέφειν that can provide a key evidence for understanding F 223 EK, allowing us, first, to bring out the true nature of Posidonius' theory (section V), and second, to identify τὰ ἀνατολικά and τὰ ἐσπέρια in the light of this theory (section VI). Leaving aside all the arguments we have put forward in the previous section, it may seem that the standard interpretation of F 223 EK did manage to cope with the cryptic expressions τὰ ἀνατολικά and τὰ ἐσπέρια. But the words ταχὺ παραλλάττειν and καταστρέφειν pose the fatal obstacle on which, as we shall see, this interpretation breaks down irretrievably.²⁹

Strabo did not hesitate to take both verbs as referring to the diurnal motion of the sun. But it is clear that he did so only to condemn Posidonius' statement as absurd, and one should admit that he has succeeded in it. It seems that only A. Dihle took Strabo's interpretation of παραλλάττειν and καταστρέφειν as a true representation

participles ἀπερχομένου and ἀνιόντος as referring to, respectively, the notions of 'quick motion' of the sun in rising and its 'retirement' to the earth in setting, which, according to Strabo, must have been implied by παραλλάττειν and καταστρέφειν in F 223 EK. But one has to admit that Dihle's interpretation of these participles is at least very strained and remains untenable, unless buttressed by very forcible arguments. Without this interpretation, the emendation suggested by Posidonius *per se* gives no support to the assumption that he linked the difference between Indians and Ethiopians to an alleged difference in the diurnal motion of the sun. A much more plausible explanation of Posidonius' emendation of Homer has been suggested by Kidd (n. 2), 269f.

²⁸ Kidd (n. 2), 802 is quite explicit about this: 'the clear reference here to east and west and to the rising sun, shows that the diurnal path and EW distinction must be meant'.

²⁹ Cf. Kidd (n. 2), 803: 'Strabo puts his finger on the real difficulty, the force of καταστρέφειν'. The same is equally true of ταχὺ παραλλάττειν.

of Posidonius' thought.³⁰ Most commentators agree that Strabo's account in this point is strikingly incomprehensible and most probably mistaken.³¹ H. Berger and F. Strenger take this view a step further and refuse to accept Strabo's testimony at all on the ground that the idea of a 'quick movement' and a 'retirement' of the sun is so incredible, that it could not belong to such a brilliant mind as Posidonius', but should rather have been a product of Strabo's own misunderstanding, incompetence and hostility.³² K. Reinhardt and I. G. Kidd, the most eminent students of Posidonius, are very pessimistic about our ability to understand what Posidonius really meant by *παρὰλλάττειν* and *καταστρέφειν*.³³

However, in so far as *ταχὺ παρὰλλάττειν* and *καταστρέφειν* are considered to be among a few authentic words of Posidonius that exist in F 223 EK (see section I), it must be taken as a *conditio sine qua non* that only those interpretations of this fragment which make sense of both verbs can have a certain claim to be considered correct.

I see three arguments against the view that by *ταχὺ παρὰλλάττειν* and *καταστρέφειν* Posidonius referred to the diurnal motion of the sun: one from common sense and two from the wording of Posidonius' statement.

From the point of view of common sense, no one would deny that the mention of a 'quick passage' and a 'retirement' is enough by itself to make Posidonius' statement totally incompatible with the notion of the diurnal movement of the sun. To put it more forcefully, so far as Posidonius talked of the sun in terms of *ταχὺ παρὰλλάττειν* and *καταστρέφειν*, the diurnal movement could not have been the one he had in view. On the contrary, both expressions can be easily accounted for if one assumes that Posidonius was talking of the annual motion of the sun in latitude. For, first, the angular velocity of this motion is in fact constantly changing all the time, and, second, twice a year, when the sun approaches the tropics, it really stops and turns back.³⁴

A closer look at Posidonius' words quoted by Strabo affords two strong confirmations of this assumption.

First, *παρὰλλάττω* can hardly be considered as a suitable verb to express movement at all, and, as applied to the diurnal movement of the sun, it is a *hapax*

³⁰ Dihle (n. 2), 105: 'Als sicher kann aber gelten, daß Poseidonios meinte, die Sonne entferne sich vom Ort ihres Aufganges schneller, als sie sich dem Ort ihres Unterganges näherte'; followed by Desanges (n. 2), 91. Forbiger (n. 2), 362 simply repeats Strabo's account without any analysis.

³¹ Letronne (n. 2), 465f., n. 2: 'Quelle étrange astronomie! et quelle physique plus étrange encore! . . . Au reste, tout ce qui suit est fort obscur et très difficile dans l'original.' Grosskurd (n. 2), 425, n. 4: 'Uebrigens erstaune ich mit Letronne über die wunderliche Astronomie und Physik, welche Strabo hier dem so gründlichen Forscher und Kenner Posidonius unterschiebt . . . Ich glaube mit Letronne, dass nur falsche Deutung und Anwendung ähnlicher und missverständlicher Lehren, oder Uebereilung und irrtümliche Mitteilung aus den Gedächtnisse diese Entstellung gewisser Sätze des Posidonius bewirkte'; see also Scheppig (n. 8), 43, n. 25; Schühlein (n. 5), 35f.; Dihle (n. 2), 105.

³² Berger (n. 14), 554; Strenger (n. 6), 88f.

³³ Reinhardt (n. 2, 1921), 65: 'Aber wo wäre eine astronomische Theorie, die ihm (Poseidonios) das hätte leisten können? Uns scheint das Problem unlösbar . . . Seine Lösung steckt in ein paar Sätzen Strabos, wegen deren man den unschuldigen Strabo größter Unkenntnis und schwersten Mißverständnisses geziehen hat'; Kidd (n. 2), 802f.: 'As it stands, isolated from context and development, apart from the dubious assistance of Strabo, it is incomprehensible . . . The problem is insoluble without further evidence, and the real puzzle is that Strabo does not give it.'

³⁴ The first scholar to point out this way of interpreting F 223 EK was Schühlein (n. 5), 36f.; for details see below n. 44. Biffi (n. 6), 394 has also suggested that Posidonius is talking here of the annual movement of the sun, but without any proof.

legomenon.³⁵ The *LSJ*, indeed, includes ‘to pass by’ among possible senses of *παράλλω*, but this is only a derivative and very rare sense.³⁶ Its basic meaning falls within the range of senses which cluster around ‘change’: *cause to alternate, change, alter, alternate, deviate, differ or vary from*, etc. Hence it would be much more natural for *παράλλω* in Posidonius’ quotation to refer to a certain *change* or *variation* in the position of the sun, rather than to its *movement*. In this sense *παράλλω* turns out to be a singularly apt verb to denote the change of the sun’s latitude in its annual cycle.³⁷ All this, at least, raises serious doubts as to whether Strabo was right in referring Posidonius’ *παράλλω* to the diurnal movement of the sun.

The key argument against the view that by *ταχὺ παράλλω* and *καταστρέφει* Posidonius referred to the diurnal motion of the sun is provided by the phrase *τὸν ἥλιον ἀνίσχοντα*. The overwhelming critical opinion is that *ἀνίσχοντα* is used here as an adverbial participle which modifies the verb *παράλλω* and indicates that, according to Posidonius, the sun moves quickly only when it is rising. The clause *τὸν ἥλιον ἀνίσχοντα ταχὺ παράλλω . . . καταστρέφει* is generally translated as ‘the sun passes by quickly, when it is rising, and then [perhaps when it is setting] turns back’, which is obvious nonsense.³⁸

But one has to object to this translation that in Greek the phrase *ἥλιος ἀνίσχων* constitutes a standard expression for the ‘sunrise’, which is normally used to indicate time (*τοῦ ἡλίου ἀνίσχοντος*, ‘at dawn’) or direction (*πρὸς ἥλιον ἀνίσχοντα*, ‘eastwards’, or *ἀπὸ ἡλίου ἀνίσχοντος*, ‘from the east’, etc.). This expression always functions in a sentence as a single semantic unit in which the participle *ἀνίσχων* is used only as an attribute of *ἥλιος*, is never separated from it and never related to the predicate as being an adverbial participle.³⁹

To return to Strabo’s clause *τὸν ἥλιον ἀνίσχοντα ταχὺ παράλλω . . . καταστρέφει*, it would therefore be much more natural to take the whole expression *ἥλιος ἀνίσχων*—rather than simply *ἥλιος*—as the subject of both its verbs. If so, the clause can only be translated as ‘the sunrise [that is, the point of the horizon where the sun rises] changes quickly, and then retires’. In this translation, the phrase turns out to be a clear reference to the annual movement of the sun. Accordingly, Posidonius’ statement quoted here by Strabo, which has been otherwise incomprehensible, proves to be intelligible.

³⁵ The electronic database of *TLG E* (CD-ROM 2001) contains no instance of the verb *παράλλω* being applied to the *movement* of any heavenly body.

³⁶ The *LSJ* refers only to Xen. *Hell.* 5.1.12 and Polyb. *Hist.* 5.14.3, etc. (3.80.4; 5.80.4; 15.2.8) where *παράλλω* is applied to the troops which *pass by* a certain place.

³⁷ Interestingly, in Posidonius’ F 126 EK the verb *παράλλω* is used to denote the variation in the latitude of the moon in relation to the ecliptic (F 266 Theiler = Diog. Laert. 7.146): *κατὰ λοξοῦ ὡς πρὸς τὸν ἥλιον κινουμένη παράλλω τῷ πλάτει, ἢ βορειοτέρα ἢ νοτιωτέρα γινομένη*. Kidd’s translation: ‘the moon moves obliquely to the orbit of the sun, with the moon’s latitude diverging either too far north, or too far south’.

³⁸ Letronne (n. 2), 465; Forbiger (n. 2), 362; F. G. Mishchenko (tr.), *Geografia Strabona* (Moscow, 1879), 847; Schühlein (n. 5), 35; Strenger (n. 6), 89; Thomson (n. 2), 214; G. A. Stratanovsky (tr.), *Strabon. Geografia* (Moscow, 1964), 763; Dihle (n. 2), 105; Kidd (n. 2), 802; id. (n. 6), 297 (quoted above in n. 28); Biffi (n. 6), 203; Radt (n. 4), 524. It is worth stressing that, unlike modern translators, Strabo himself does not interpret *ἀνίσχοντα* in this way, at least openly.

³⁹ According to the *TLG*-corpus, no instance of the phrase *ἥλιος ἀνίσχων* (or its other variants) with the participle *ἀνίσχων* being used as an adverbial is attested.

The conclusion seems inevitable that Posidonius' words *ταχὺ παραλλάττειν* and *καταστρέφειν* referred not to the diurnal path of the sun, as Strabo suggests, but to its annual motion in latitude.

V. POSIDONIUS' THEORY IN F 223 EK: A PROBLEM SOLVED

What is most puzzling in F 223 EK is that Posidonius is not only credited with two claims which are incredible *per se*—that the 'west' is more affected by the sun than the 'east', and that the sun sometimes 'moves faster' and sometimes 'turns back'—but that he is supposed to have combined them into a coherent theory in which they work as cause and effect. Therefore, it is crucial for understanding F 223 EK to explain how these two ideas could have been connected. The standard interpretation has conspicuously failed to give such explanation.

Having shown in sections III–IV that neither Posidonius' words *τὰ ἀνατολικά* and *τὰ ἐσπέρια* refer to eastern and western parts of the *oikoumene*, nor do *ταχὺ παραλλάττειν* and *καταστρέφειν* to the diurnal motion of the sun from east to west, we are now in a position to take up the question we have raised in section II: whether Posidonius' theory had anything at all to do with the idea of a *longitudinal* differentiation of climate, as Strabo claims and most scholars believe?

If we put aside for a moment the questions we have been discussing up to this point—what regions are referred to as *τὰ ἀνατολικά* and *τὰ ἐσπέρια*, whether the diurnal or annual path of the sun is implied, and what the phrase *τὸν ἥλιον ἀνίσχοντα* means—then the main point of Posidonius' theory may be formulated as follows. He is speaking of two particular regions and arguing that the climatic difference between them is determined by a kind of irregularity in the movement of the sun: the one is wet because the sun 'passes over quickly' there, the other is dry because there it 'turns back'.

A striking coincidence attracts our attention: we do know of a Posidonian theory that perfectly suits this description, and which was mentioned by Strabo elsewhere (2.3.2 C97).⁴⁰ By means of this theory Posidonius tried to explain why the equatorial zone has a more temperate climate than the tropical, contrary to the universal law that southern latitudes must be more heated by the sun than northern. The explanation of this anomaly was found, according to this theory, in the irregularity of the sun's annual motion in latitude. Hence, I shall call this theory the 'solar', for the lack of a more suitable one-word expression.

The theory was based on the premise that the climate of a given region depends directly on the length of time the sun stays at the zenith there. Accordingly, the tropical region turns out to be more affected by the sun than the equatorial, because there the sun spends a longer time in a year staying in the zenith.⁴¹ To put it another

⁴⁰ The best exposition of this theory is given by Cleomedes (1.4.90–112 = F 210 EK = F 283 Theiler). Another detailed account is found in Geminus (16.32–8), but he ascribes this theory to Polybius (*Hist.* 34.1.7–13). The theory is also referred to by Ptolemy and Plutarch (quoted in nn. 42, 43).

⁴¹ Cf. Gemin. 16.34: 'Ὁ γὰρ ἥλιος περὶ μὲν τοὺς τροπικοὺς κύκλους πολὺν ἐπιμένει χρόνον κατὰ τε τὴν πρόσσodon τὴν πρὸς αὐτοὺς καὶ τὴν ἀποχώρησιν, ὥστε σχεδὸν ἐφ' ἡμέρας μὲν πρὸς αἰσθῆσιν ἐπὶ τροπικὸν κύκλον. G. Aujac (edition and translation with commentary), *Géminos. Introduction aux phénomènes* (Paris, 1975), 82. This argument is reported by all sources we have and forms the core of the 'solar' theory. The theory includes three other arguments of minor importance. Two of them are reported by Cleomedes. First, when the sun stays over the equator, 'the night-time there is always equal to the daytime', but

way, the sun in its annual motion ‘approaches the equator rapidly and again distances itself at an equal speed, and does not spend a prolonged time at that latitude’ (Cleom. 1.4.101–4)⁴² and, by contrast, ‘approaches the tropics and withdraws from them rather slowly, and for that reason spends a longer time near them’.⁴³ The essence of this argument can easily be put as follows: ‘[the point of] the sunrise changes rapidly when the sun passes the equator at the equinox, but as the sun approaches the tropic, it slows down until it has stopped at the solstice and then turns back’. It is not hard to see that this is precisely what we find in F 223 EK, as shown in the preceding section.⁴⁴

All in all, we see that the ‘solar’ theory can give a perfectly consistent explanation of how the notions of ‘quick passage’ and ‘turning back’ of the sun could be connected with the ‘dryness’ and ‘wetness’ of a certain two regions. Hence the most economical hypothesis we can suggest is that this theory was the one that Posidonius had in view in F 223 EK.

A corollary of this conclusion is that the question we put aside in section III, viz. what regions are meant by τὰ ἀνατολικά and τὰ ἐσπέρια, ought to be answered

when it comes to the tropic, the daytime there amounts to 13½ hours. Second, at the equator the air ‘is always in the exact center (ἐν τῷ μεσαιάτῳ, i.e., most voluminous [part] of the [nocturnal] shadow’ cast by the earth, in contrast to the air at the tropic. The third argument, preserved by Strabo (2.3.2 C97), maintains that at the equator the sun moves faster not only in latitude, but also in its diurnal motion, ‘for in motions completed in the same time, those over the greatest circles are more rapid’ (δξύτεροι γὰρ αἱ κατὰ μεγίστου κύκλου τῶν ὁμοταχῶν κινήσεων). For correct explanation of this argument see: Berger (n. 14), 554; Reinhardt (n. 2, 1921), 66f.; G. Aujac (edn and transl. with commentary), *Strabon: Géographie* 1.2 (liv. Book 2) (Paris, 1969), 144, n. 4. What Posidonius had in mind here was obviously not the apparent angular speed of the sun in the sky, but the linear speed of the terrestrial point at which the sun stays in the zenith while passing over the equator at the equinox and over the tropic at the solstice. Since the equator is longer than the tropic, and the period of the revolution of the sun is constant for every latitude, one may say that at the equator the sun moves faster than at the tropic. We shall not linger on these arguments, for they all are irrelevant to the explanation of F 223 EK.

⁴² R. Todd (ed.), *Cleomedes: Caelestia* (Leipzig, 1990), 22: ταχέως τῷ κύκλῳ τούτῳ καὶ προσιώντος τοῦ ἡλίου καὶ πάλιν ἰσὺ τάχει ἀφισταμένου αὐτοῦ καὶ μὴ ἐγχρονίζοντος περὶ τὸ κλίμα. Translation is taken from A. C. Bowen and R. Todd, *Cleomedes' Lectures on Astronomy: A Translation of The Heavens with an Introduction and Commentary* (Berkeley, Los Angeles and London, 2004), 56. Cf. Gemin. 16.36: Ἀπὸ δὲ τοῦ ἡμερινοῦ κύκλου ταχείας συμβαίνει τὰς ἀποχωρήσεις γίνεσθαι; Strabo 2.3.2 C97: τὸ ἐκεῖ τὰς μεταστάσεις δξύτερας εἶναι τὰς εἰς τὰ πλάγια, ὡς δ' αὐτῶς καὶ τὰς ἀπ' ἀνατολῆς ἐπὶ δύσειν τοῦ ἡλίου. Ptol. Geog. 1.9.3: τὰς κατ' αὐτὸν ἐπὶ τὰ πλάγια τοῦ ἡλίου παρόδους δξύτερας συνίστασθαι. The meaning of the term τὰ πλάγια is explained by Aristotle (*Caelo* 2.2 285b): τὰ πλάγια ἐν τῷ κόσμῳ οὐ τὸ ἄνω καὶ τὸ κάτω, ἀλλὰ τὸ παρὰ τοὺς πόλους, ὡς τούτου μήκους ὄντος. Hence the movement of the sun εἰς τὰ πλάγια or ἐπὶ τὰ πλάγια means its annual path from one hemisphere to another.

⁴³ Cleom. 1.4.90–2: Σχολιαώτερον δέ, καθάπερ ἔφαμεν, τοῦ ἡλίου προσιώντος τοῖς τροπικοῖς καὶ ἀποχωρούντος, καὶ διὰ τοῦτο ἐπὶ πλεον περὶ αὐτοὺς ἐγχρονίζοντος. The translation is by Bowen and Todd (n. 42), 55f. Cf. Plut. *De anim. procreat.* 1028 E: τοῦ δ' ἡλίου περὶ τὰς τροπὰς ἐλάχιστα καὶ μέγιστα περὶ τὴν ἡμεριαν ἐχόντος κινήματα, δι' ὧν ἀφαίρει τῆς ἡμέρας καὶ τῇ νυκτὶ προστίθῃσιν ἢ τοῦναντίον.

⁴⁴ Even if we assume with most commentators that τὸν ἡλίον ἀνίσχοντα refers to the ‘sun in rising’, i.e. to the sun’s diurnal path, the ‘solar’ theory will provide an equally good explanation of such an odd statement. For, as we have seen (n. 41), Posidonius really believed that the diurnal movement of the sun is more rapid at the equator than at the tropic. Such an explanation was suggested by Schühlein (n. 5), 36f., who was the first to note that F 223 EK turns out to be intelligible when viewed as referring to the ‘solar’ theory, and in particular that the καταστροφή of the sun can be explained as a reference to the sun’s turning at the tropic, but he has failed to find a convincing explanation of the terms τὰ ἀνατολικά and τὰ ἐσπέρια.

within the framework of the 'solar' theory. But the problem is that the only purpose the 'solar' theory has been designed for is to explain the difference between equatorial and tropical regions. This theory could in no way be used to prove that the western regions are drier than the eastern.

I see only one opportunity to explain how Posidonius could use his 'solar' theory to argue for the greater dryness of τὰ ἐσπέρια, in comparison with the wetness of τὰ ἀνατολικά. He could do it if and only if he spoke not of the 'west' and 'east' in the strict sense of these words, as Strabo supposes, but only of two particular districts, of which the western one was situated near the tropic, while the eastern one near the equator. Obviously, Maurusia, Iberia and India, referred to by Strabo, can in no way satisfy this condition.

VI. POSIDONIUS ON LIBYA: CONFIRMATION OF OUR HYPOTHESIS

If our explanation of τὰ ἀνατολικά and τὰ ἐσπέρια is correct, we ought to answer the following question: what particular regions could Posidonius imply by these terms? The answer to this question must be searched for in those short quotations from Posidonius that Strabo takes as the starting point for the discussion in 17.3.10. Here lies the crux, for the only region mentioned there is a part of Libya denoted as the 'northern' (see section VII).

It can hardly be a matter of coincidence that Posidonius' reasoning in F 223 EK starts from the claim that τὰ ἀρκτικά μέρη of Libya are especially dry. Further development of his argument, as reported by Strabo, makes it clear that the thesis of the dryness of τὰ ἐσπέρια has been subordinated to this claim, being designed to explain the cause of the dryness of τὰ ἀρκτικά μέρη.⁴⁵ Hence the conclusion we may confidently draw from the logic of Posidonius' argument is that τὰ ἀρκτικά μέρη of Libya can be identified with the enigmatic τὰ ἐσπέρια from the next sentence.⁴⁶ If so, I think it is most reasonable to suppose that the sole region Posidonius was speaking of when mentioning 'western and eastern parts' was Libya.⁴⁷

Interesting corroboration of our interpretation of τὰ ἀνατολικά and τὰ ἐσπέρια is forthcoming from the testimony about Posidonius' general views on the geography of Libya. There are two important points to be considered here.

First, although we have no direct evidence as to what Posidonius thought of the shape of Libya, there are good reasons to assume that he conceived of it in the same way as did both his great predecessor Eratosthenes and no less famous successor Strabo. Strabo (17.3.1 C825), drawing on Eratosthenes (F III B 55

⁴⁵ I cannot help noticing that modern commentators of F 223 EK have failed to take account of the apparent logical connection between these two statements: on the dryness of τὰ ἀρκτικά μέρη of Libya and on the dryness of τὰ ἐσπέρια. This reproach especially holds for Kidd (n. 2), 803 who has formulated his position most explicitly: 'the intercontinental EW difference . . . indeed must have been Posidonius' context, but then *it is irrelevant* to introduce the sentence in relation to differences of climate within Libya' (my italics). On the contrary, my contention is that it is not only highly relevant that Posidonius introduced the sentence about τὰ ἐσπέρια and τὰ ἀνατολικά only as a confirmation of his remark about Libya, but that this relation is the one that will provide the key to understanding the entire F 223 EK.

⁴⁶ Cf. Thomson (n. 2), 214. The plausibility of this identification is reinforced by the fact that, as we shall see in section VII, the part of Libya that Posidonius called τὰ ἀρκτικά μέρη was most probably the desert subtropical belt postulated in his 'solar' theory.

⁴⁷ Cf. Russian translation of Strabo by Stratanovsky (n. 38), 763.

Berger),⁴⁸ describes Libya as a right-angled triangle, which has for its base the sea-coast extending from Egypt to the Pillars of Hercules, the shorter side perpendicular to this being formed by the Nile up to Ethiopia, while the hypotenuse is constituted by the shore of the ocean between Ethiopia and Maurusia.⁴⁹

Confirmation of this assumption comes from a passage of Agathemerus which refers to Posidonius' views on the shape of the *oikoumene* (*Hypotyp.* 1.2 = *FGrH* 87 F 98a = F 200a EK = F 68a Theiler):⁵⁰

Ποσειδώνιος δ' ὁ Στωϊκὸς σφενδονοειδῆ καὶ μεσόπλατον ἀπὸ νότου εἰς βορρᾶν, στενὴν πρὸς ἑω καὶ δύσιν, τὰ πρὸς εὐρον δ' ὁμοίως πλατύτερα [τὰ] πρὸς τὴν Ἰνδικήν.

Posidonius the Stoic [drew the earth] sling-shaped and wide in the middle from south to north, narrow to the east and west, wider, however, to the southeast, towards India. (trans. A. Diller)

Two considerations link this passage to the Eratosthenian concept of Libya.

First, the second source in which the expression *σφενδονοειδής* is used to describe the shape of the *oikoumene* is a geographical poem of Dionysius Periegetes (7).⁵¹ Since his account is more detailed, it allows us to clarify the implication of the term *σφενδονοειδής* for the shape of Libya.

Dionysius (271–8; 620–3) states that the *σφενδονοειδής* shape of the continent is constituted by two great 'cones' (*κῶνοι*, that is, by two isosceles triangles), which have a common base and vertices directed westwards and eastwards, respectively. The eastern cone is Asia, while the western one is formed by Europe and Libya joined together. Since Dionysius postulates that the boundary between Libya and Asia is constituted by the Nile (18, 230), and the westernmost vertex of both Europe and Libya are the Pillars of Hercules (184, 281, 334), it follows that the *σφενδονοειδής* shape of the *oikoumene* necessarily presupposes that Libya must have the shape of the Eratosthenic triangle.⁵²

⁴⁸ A good case for suggesting that Strabo's passage represents Eratosthenes' views has been made by H. Berger, *Die geographischen Fragmente des Eratosthenes* (Leipzig, 1880), 310f.; id. (n. 14), 400; followed by G. Knaak, 'Eratosthenes 4', *RE* 6.1 (1909), 368; F. Gisinger, 'Geographie', *RE* Suppl. 4 (1924), 609; E. Honigmann, 'Libye 2', *RE* 13.1 (1926), 170f.; cf. also Zimmermann (n. 6), 120f.

⁴⁹ Yet, elsewhere Strabo compares the shape of Libya with a trapezium (2.5.33 C130: *ποιοῦσαν τραπέζιον πῶς τὸ σχῆμα*). Strenger (n. 6), 23f. and Honigmann (n. 48), 174f. supposed that Strabo borrowed this comparison from Posidonius, but this is merely a possible but untenable assumption. For a good discussion of this point see Zimmermann (n. 6), 122–5.

⁵⁰ A. Diller (edn and transl. with commentary), 'Agathemerus, Sketch of Geography', *GRBS* 16 (1975), 59–76, esp. 60f., 67.

⁵¹ K. Brodersen (edn and transl.), *Dionysios von Alexandria. Das Lied von der Welt* (Hildesheim, Zürich and New York, 1994). Posidonius was supposed to be one of the main authorities for Dionysius: A. Göthe, *De fontibus Dionysii Periegetae* (Diss. Göttingen, 1875), 7f.; G. Knaak, 'Dionysios 94', *RE* 5.1 (1903), 920f.; U. Bernays, *Studien zu Dionysius Periegetes* (Diss. Heidelberg, 1905), 47f.; Piankov (n. 2), 99f. Yet it seems that his influence on Dionysius has been seriously overestimated.

⁵² See Brodersen (n. 51), 14f., fig. 1. Yet elsewhere, in the context of a detailed description, Dionysius characterized Libya as *τραπεζίῳ εἶδος ὁμοίῃ* (175). But in this description he clearly speaks of the Red Sea as the eastern limit of Libya (178: *οὐδὲν δ' Ἀραβίης τεκμαίρεται ἄγχι θαλάσσης*), so that the comparison of its western half with a triangle remains just as valid. Moreover, Dionysius' words that Libya 'begins first at Gadeira, where a pointed cape is projected far to the Ocean' (*ἀρξαμένη πρώτιστα Γαδείροθεν, ἥχι περ ἄκρη ἐς μυχὸν δξυνθείσα τιταίνεται Ὠκεανοῖο*), and then Libya 'stretches southwards and eastwards' (*ἔρπει, ἐς νότον ἀνατολήν τε*) speak in favour of a triangular shape as well. Hence, Zimmermann (n. 6), 125, n. 501 is wrong in supposing that the western and eastern sides of Dionysius' Libya were parallel.

Second, one cannot fail to notice that both Agathemerus' account of the 'sling-shaped' *oikoumene* and Dionysius' conception of the continent composed of two 'cones' are based on the Eratosthenian geographical system, as it is described by Strabo (2.5.16 C120 = Eratosth. F III A 24 Berger).⁵³ This system postulated that the continent reaches its greatest breadth along the main meridian drawn through Rhodes, Alexandria and the Nile, and its greatest length along the main parallel drawn through the Pillars of Heracles and Rhodes. Hence it was supposed that the continent was continually tapering towards the west and the east from the central meridian and up to the westernmost cape of Spain and the easternmost promontory of Asia. This is precisely the picture we find in Agathemerus and Dionysius. The only difference is formal: Eratosthenes defined this shape of the *oikoumene* as *χλαμυδοειδής*,⁵⁴ while Posidonius and Dionysius chose a more clear comparison with a sling.⁵⁵ It is not hard to see that the triangular shape of Libya was an integral part of the Eratosthenian picture of the *oikoumene*, and therefore it must have been necessarily inherited by Posidonius and Dionysius, so far as they accepted the basic elements of Eratosthenes' system.

The second well-attested fact concerning Posidonius' views on Libyan geography is that he placed the south-eastern part of Libya in the temperate equatorial zone postulated by the 'solar' theory.⁵⁶ What is more, it is precisely this theory that has led him to this conclusion.

Posidonius proceeded from an attempt to account for the phenomenon of the Nile, namely, to explain where it takes water in the hot and dry south and what causes its floods in summer. Posidonius considered this problem in the light of his 'solar' theory and came to the natural conclusion that the area in which the Nile takes its rise, and which was supposed to lie in the south-eastern part of Libya, must belong to the equatorial temperate zone.⁵⁷ In this way Posidonius achieved two purposes: to provide a consistent explanation of the much-debated phenomenon of the Nile, and at the same time to support his 'solar' theory by a concrete illustration of its effect.

The emerging picture of Libya according to Posidonius can be visualized as follows (see fig. 1).

Let us now return to *τὰ ἐσπέρια* and *τὰ ἀνατολικά*. If we draw an imaginary line dividing Libya (fig. 1) into western and eastern halves, we see that, according to Posidonius, the southernmost latitude the western half could reach was the tropic of Cancer only, whereas only the easternmost part of Libya could reach the equator (these two areas are marked by the shaded rectangles). If we assume that in F 223 EK Posidonius was speaking of Libya (namely of its inner parts), *τὰ ἐσπέρια* and *τὰ ἀνατολικά* being its western and eastern halves, this can explain what he meant when referring to a dry subtropical region as *τὰ ἐσπέρια*, and to a fertile equatorial region

⁵³ On Eratosthenes as the source of this description see Berger (n. 48), 198–200; id. (n. 14), 400, 403–6, 428, 476–8. For a valuable discussion of this system see C. van Paassen, *The Classical Tradition of Geography* (Groningen, 1957), 39–42; G. Aujac, *La géographie dans le monde antique* (Paris, 1975), 71–6; C. Jacob, 'Cartographie et rectification', in G. Maddoli (ed.), *Strabone: contributi allo studio della personalità e dell'opera* (Perugia, 1986), 2.52f.; F. Prontera, 'Sulla basi empiriche della cartografia greca', *Sileno* 23 (1997), 50–4.

⁵⁴ Strabo 2.5.6 C113 = Eratosth. F II B 27 Berger; cf. Strabo 2.5.9 C116, 2.5.18 C122. See Zimmermann (n. 6), 122.

⁵⁵ On the meaning of this comparison see Zimmermann (n. 6), 123f.

⁵⁶ Kidd (n. 2), 238; Theiler (n. 2), 24f.

⁵⁷ Cleom. 1.4.90–112 = F 210 EK = F 283 Theiler; Strabo 2.3.3 C97f. = *FGrH* 87 F 28 = F 49 EK = F 13 Theiler.

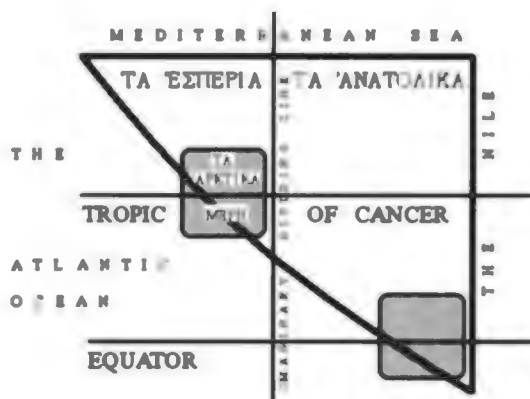


Fig. 1. Posidonius' concept of Libya: a possible explanation of F 223 EK.

as *τὰ ἀνατολικά*. In this way, Posidonius' conception of Libyan geography not only proves to be consistent with our interpretation of the terms *τὰ ἀνατολικά* and *τὰ ἐσπέρια*, but also helps us to bring out and visualize the possible implication of F 223 EK.

VII. *TA ΑΡΚΤΙΚΑ ΜΕΡΗ*: FURTHER CONFIRMATION

Further confirmation of our hypothesis can be drawn from the expression *τὰ ἀρκτικά μέρη* which Posidonius applies to the part of Libya that he is speaking of and that should be identified with *τὰ ἐσπέρια*, as we have seen in section VI.

It is evident that the only part of Libya that was in antiquity normally referred to as 'northern' was the one adjacent to the Mediterranean. Hence, no wonder that Strabo boldly refers Posidonius' statement to the north African coast between Lynx and Carthage. But there are good reasons to question the veracity of this identification, for this is contradicted both by the internal economy of Strabo's argument in itself and by parallel evidence about Posidonius' views on Libya.

As to the economy of Strabo's argument, two curious details undermine our credence in Strabo's words. First, it is remarkable that the mention of Lynx and Carthage is introduced only as an inserted parenthesis with a reference to Artemidorus, rather than as an integral part of the quotation from Posidonius.⁵⁸ Second, when Strabo identifies the rivers mentioned by Posidonius as 'few and small' with those between Lynx and Carthage, he does so only to refute it right away (*ἐν δὲ τῇ μεσογαίᾳ ταύτῃ ἀληθέστερον εἰπεῖν*) and thus to gain an occasion to reproach Posidonius once more.

The best way to account for these oddities is to assume that in treating of the expression *τὰ ἀρκτικά μέρη* Strabo follows the same pattern as we have detected in section I for his handling of Posidonius' sentence about *τὰ ἀνατολικά* and *τὰ ἐσπέρια*. If we suppose that the only information Strabo had at his disposal was a bare expression *τὰ ἀρκτικά μέρη* taken out of its context, and he did not know which particular part of Libya Posidonius had had in mind, then we can reveal in Strabo's

⁵⁸ Even if one accepts Kidd's emendation (see n. 6), this parenthesis turns out to be a reference to another statement of Posidonius, which was equally irrelevant to the present case.

account all three elements which are characteristic of this pattern: (1) he takes the expression τὰ ἀρκτικά μέρη as the starting point; (2) interprets it in its usual sense as referring to the Mediterranean coast of Africa; and (3) this identification enables him to contrast Posidonius' statement with that of Artemidorus about the rivers between Lynx and Carthage, in order to refute it finally. Hence it is most likely that the reference to the coast between Lynx and Carthage had nothing to do with what Posidonius really implied.

As to the parallel evidence, it has long been noted that the fact of the great fertility of the Mauretanian coast was generally recognized in antiquity (Strabo 2.5.33 C131; 17.3.4 C826), and there is no doubt that Posidonius, who visited this country personally,⁵⁹ was fully aware of this fact.⁶⁰ To my mind, F. Schühlein and I. G. Kidd have made a reasonable case that by the dry 'northern' part of Libya 'Posidonius could not have intended the fertile Mediterranean coastline, but the area under the tropic',⁶¹ that is, the part of Libya that was considered to be the driest according to the 'solar' theory. This case is strengthened by verbal correspondence between Posidonius' account of τὰ ἀρκτικά μέρη—ὀλίγοις καὶ μικροῖς διαρρεῖσθαι ποταμοῖς . . . μὴ γὰρ κατομβρεῖσθαι—and his description of the subtropical belt (2.2.3 C95): ἔχειν γάρ τι ἴδιον τὰς ζώνας ταύτας ἀνχμηράς τε ἰδίως καὶ ἀμμώδεις ὑπαρχούσας . . . ὅρη γὰρ μὴ εἶναι πλησίον ὥστε τὰ νέφη προσπίπτοντα ὀμβροὺς ποιεῖν, μὴ δὲ δὴ ποταμοῖς διαρρεῖσθαι.⁶²

If this assumption is correct, then there must have been a very powerful reason for Posidonius to refer to a subtropical region of Libya as the 'northern part'. And the simplest possible explanation is to suppose that Posidonius has applied this expression because he had in mind another area lying still farther south, to which he opposed the subtropical region as being 'northern'. This is precisely what we have on figure 1, provided that τὰ ἀρκτικά μέρη is identified with τὰ ἐσπέρια and τὰ ἀνατολικά with the southernmost part of the eastern Libya.

CONCLUSION

The result of our investigation is twofold. We have to admit minimally that the view that in F 223 EK Posidonius postulated a kind of universal east-west climatic differentiation does not stand up to close scrutiny. We may also conclude with an equal degree of confidence that the theory which Posidonius referred to in F 223 EK was the same by which he sought to explain the climatic difference between the equatorial and the tropical zone. After that, we suggest a possible explanation of how Posidonius could have used this theory to prove that 'east' is wet and 'west' is dry. Posidonius' idea becomes perfectly intelligible, provided that he was speaking not of the whole *oikoumene*, but only of the western and eastern parts of the inner Libya.

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⁵⁹ T 21 EK = FGrH 87 F 73 = F 65 Theiler = Strabo 17.3.4 C827.

⁶⁰ As has been emphasized already by Letronne (n. 2), 465f., n. 2 (followed by Strenger [n. 6], 88f.) and Kidd (n. 2), 801; id. (n. 6), 296, n. 269 (followed by Biffi [n. 6], 394).

⁶¹ Schühlein (n. 5), 35; Kidd (n. 2), 801; id. (n. 6), 296, n. 269, followed by Biffi (n. 6), 394; the quotation is from Kidd (n. 2), 801.

⁶² This parallel was noted by Letronne (n. 2), 464, n. 3; Schühlein (n. 5), 35; Strenger (n. 6), 88f.; Zimmermann (n. 6), 130, n. 522. Yet, one should not rely too heavily on it, since the lack of rainfall and the paucity of rivers is an apt characteristic for any desert region.