

*8. The same revision [of the latitudinal dimension],
on the basis of land journeys*

Let us now turn to the journeys. For the land journey, [Marinos], counting the days of the individual marches from Leptis Magna to the country of Agisymba, reckons that [Agisymba] is 24,680 stades south of the equator. For the sea [journey], again using the days of sail from Ptolemais in Trōglodytikē to Cape Prason, he reckons [Cape Prason] also to be 27,800 stades south of the equator. In this way he moves Cape Prason and the country Agisymba—which belongs to the Aithiopians²⁹ and, as he himself says, does not constitute the southern limit of Aithiopia—to the frigid zone of the *antoikoumenē*; for 27,800 stades make $55\frac{3}{5}^\circ$ on the meridian, and this is as many degrees [south] from the equator as the Skythians and Sarmatians who live to the north of Lake Maiōtis are in the other direction, [and the Skythians and Sarmatians live] in this kind of [frigid] climate.

Now [Marinos] himself reduces the foregoing number of stades to less than half, that is, to 12,000 stades, which is approximately how far the Winter Tropic is from the equator. The only reasons that he gives for the reduction are the diversions from rectilinear routes and the variable speeds of the journeys, while he passes over still more fundamental and obvious [reasons] that make it clear not only that a reduction is necessary, but also [that it must be reduced] to this extent.

First, concerning the land journey from Garamē to the Aithiopians he says that Septimius Flaccus, who made a campaign out of Libyē, reached the Aithiopians after leaving the people of Garamē after marching south for three months; and Julius Maternus, who [campaigned] from Leptis Magna, leaving Garamē together with the king of the people of Garamē (who was making an expedition against the Aithiopians), after they had all marched for four months to the south, reached Agisymba, the Aithiopians' country, where the rhinoceros congregate.³¹ Each of these [accounts] is implausible even on its own, both because the inland Aithiopians are not so far as a three-month journey from the people of Garamē (who are themselves more or less Aithiopians and have the same king as [the inland Aithiopians]) and because it would be absolutely pre-

²⁹By "Aithiopians" Ptolemy means dark-skinned people, as becomes clear in the next chapter. See Geographical Index.

³⁰The inhabitable part of the southern hemisphere corresponding to the *oikoumenē* in the northern hemisphere.

³¹Nothing definite is known about the Roman travelers Septimius Flaccus and Julius Maternus. Desanges (1978, 197–213) suggests that Flaccus led a military expedition in the reign of Domitian, c. A.D. 80, and that Maternus traveled to Agisymba c. A.D. 90 to procure rhinoceros for the imperial games at Rome. On these journeys, and the calculations Marinos and Ptolemy based on them, see Appendix A.

posterous [to imagine that] the king's expedition toward his subjects was in just one direction, from north to south, when these peoples are stretched out far on either side, to the east and west, to say nothing of making no significant pauses anywhere. For these reasons it is likely that [these] men either told travelers' tales or used the expression "to the south" for "toward the *Notos* wind" or "toward the *Lips* wind," as the locals tend to talk, misusing the rough [term] in place of the exact.

*9. The same revision [of the latitudinal dimension],
on the basis of sea journeys³²*

Next, concerning the sail between Arōmata and Rhapta, he says that a certain Diogenes, who was one of those who sailed to India, returning the second time, was driven back when he got to Arōmata by the *Aparktias* [north] wind and had Trōglodytikē on his right for twenty-five days, and [he then] reached the lakes from which the Nile flows, slightly to the south of which is Cape Rhapta.³³ [Marinos also says] that a certain Theophilos,³⁴ one of those who sailed to Azania, set sail from Rhapta by the *Notos* wind, and on the twentieth day reached Arōmata. Neither of these said that it was a sail "of so many days." Theophilos said that he came to land on the twentieth day, and Diogenes [said] that he sailed along Trōglodytikē for twenty-five days; thus they reported only how many days they sailed, without reckoning how many days' sail it was,³⁵ taking account of the variation and shifting of the winds over such a long time. Nor [did they say] that their sail was entirely to the north or to the south. Diogenes said only that he had been driven by the *Aparktias* wind, and Theophilos, that he had set sail by the *Notos* wind, neither of them saying that the rest of the voyage maintained the same direction; for it is not to be believed that the course of the winds would be maintained for so many days.

But there is also this reason [for doubting Marinos' calculations]: whereas Diogenes traveled the interval from Arōmata to the lakes to the south of which

³²On the use Marinos made of the voyages reviewed in this chapter, see Appendix B.

³³Diogenes, who is otherwise unknown, must have taken the southern trade route by the southwest monsoon from Arōmata to southern India. The return voyage was begun in December or January, using the northeast monsoon to cross the open ocean and seasonal east winds to pass through the Gulf of Aden. Presumably Diogenes hit the African coast too far south to enter the gulf and was driven even further south. Ptolemy returns to the topic of the location of the lakes at the source of the Nile in 1.17.

³⁴Theophilos is also otherwise unknown.

³⁵Ptolemy's point is that a trip may, on the average, be so many days' sail, but sometimes might take more or fewer days. And since all the two travelers said was how many days it actually took them, not the average for all travelers, one should not treat their figures as averages. In the *Periplus Maris Erythraei* (cf. p. 27), coastal distances are often given in terms of number of days' sail.

is Cape Rhapta in twenty-five days, Theophilos sailed the interval from Rhapta to Arōmata, which is greater, in twenty days. Though Theophilos set down the travel of a day and a night as a sail of a thousand stades,³⁶ which [Marinos], too, follows, nevertheless [Marinos] says that the sail from Rhapta to Cape Prason, which is of many days, was set down by Dioskoros as only five thousand stades,³⁷ presumably because the winds on the equator are easily changeable since the shifting positions of the sun from side to side [i.e., from north to south] are more pronounced there.

Not only for these reasons should he have abandoned the number of days recorded, but also for the most manifest reason of all: the resulting computation brings the Aithiopians and the gathering place of rhinoceros into the frigid zone of the *antoikoumenē*, although all animals and plants that are on the same parallels or [parallels] equidistant from either pole ought to exist in similar combinations in accordance with the similarity of their environments.³⁸

And for this very reason Marinos reduced the distance [to the southern limit of the *oikoumenē*] to just as far as the Winter Tropic. But he gave not a single logical reason for reducing by *this* amount, [even] if one were to accept (as he does) both the number of days and the [assumption] that the journeys were uniform [in direction and speed]; retaining these [data], he merely reduces the number of stades per day beyond what is reasonable or usual, until the [southern] limit reaches the parallel that he thinks it ought to reach. On the contrary, it would have been logical for one to believe that a day's travel *could* be so far, while not believing that they were uniformly constant in speed and direction. So that on the basis of these [data] we cannot obtain the distance we are looking for, but merely the fact that [this distance] is greater than the distance to the equator.³⁹

Instead, [the distance could have been obtained] from some one of the more unambiguous [i.e., astronomical] phenomena—and something of this kind would

³⁶Cf. 1.17 for Ptolemy's estimate of only 500 stades for a sail of a day and a night near Rhapta. Night sailing was generally to be avoided, but the *Periplus* (ch. 15; Casson 1989, 60) confirms the practice of both night and day runs along this coast.

³⁷Dioskoros is otherwise unknown. It is not clear whether he, too, was a mariner or a geographical writer.

³⁸I.e., if we find dark-skinned people and rhinoceros at a certain latitude south of the equator, then we should expect to find such things at a similar latitude north of the equator. The argument appears again at the end of this chapter.

³⁹In other words, Marinos assumed that each day's journey was of constant length, but, rather than adopt a traditional value, he chose a constant that would produce an acceptable value for the total distance. On the other hand, Ptolemy assumes that the traditional estimate for a day's travel is valid, but only as a maximum value. Consequently the daily journeys could have varied sufficiently, in both extent and direction, to make it impossible to obtain a reasonably accurate figure for the total north-to-south distance.

also have been absolutely accurate—supposing someone making the investigation in a more mathematical manner had come across the [phenomena] characteristic to those countries. But since such research has not been made, there is nothing for it but to examine more roughly, and on the basis of a simpler [kind of evidence], what a reasonable amount for the extension [of the known world] beyond the equator would be. This is the [evidence] of the forms and colors of the local animals, from which it would follow that the parallel through the country of Agisymba, which clearly belongs to the Aithiopians, is not as far as the Winter Tropic, but lies nearer the equator. For in the correspondingly situated places on our side [of the equator], that is those on the Summer Tropic, people do not yet have the color of the Aithiopians, and there are no rhinoceros and elephants; but in places not much to the south of these, moderately black people are to be found, such as those who live in the “Thirty Schoinoi” outside Soēnē. Of the same type, too, are the people of Garamē, whom Marinus also says (and indeed for this very reason) live neither right on the Summer Tropic nor to the north, but entirely to the south of it. But in places around Meroē people are already quite black in color, and are at last pure Aithiopians, and the habitat of the elephants and more wonderful animals is there.

10. That one should not put the Aithiopians south of the parallel situated opposite to that through Meroē

Thus, it would be best at this stage of the question, that is, so long as the report of those who reach there records [the presence of] Aithiopians, to draw the country of Agisymba and Cape Prason, together with whatever lies on the same parallel, approximately on the parallel correspondingly situated to the one through Meroē, that is, the parallel which is south of the equator by the same number of degrees, $16\frac{5}{12}^\circ$, or approximately 8,200 stades. Hence the whole latitudinal breadth amounts roughly to $79\frac{5}{12}^\circ$, or in whole numbers 80° or 40,000 stades.

We should, however, retain the interval between Leptis Magna and Garamē as Flaccus and Maternus set it, as 5,400 stades. For the twenty days belong to a return journey, which was shorter in comparison with the first, since [the return] was in a north-south direction while the [first journey] was thirty days long because of the diversions. Moreover, [Marinos] says that the travelers stated the number of stades for each day, [this number] having often been not just possible but also necessary because of the distances between the watering places. Just as one has to reserve judgment concerning great distances and those which have seldom been traveled, or not [traveled] in a way about which there is general agreement, so one should trust those which are not great but have been traveled often and by many people in a way that is agreed upon.