

there it is necessary that the said vessel change and take her course along said line in the direction of the Antarctic pole up to that point where the Arctic pole is fifteen degrees in elevation, and then at that exact end will be the end of the line or parallel which passes through the said Cape Verde and at the end and true terminus of the said 370 leagues; which terminus is very clearly indicated by the elevation of the North star according to the aforesaid rule.

5. And because the sailing chart is not wholly useful and does not suffice for the mathematical demonstration of the above rule, a world map in spherical form is necessary, divided into two hemispheres by its lines and degrees, and the situation of the land, islands and sea, each in its own place—which world map, put down together with these expressions of my meaning and opinion, the more clearly to demonstrate the truth.

And I say that to understand the above rule and practical method it is necessary to be a cosmographer, arithmetician and navigator, or to understand the art; and he who does not possess all these three sciences, cannot possibly understand (the rule) nor (can he succeed) by any other way or rule if he is not expert in the three said sciences.

6. And for a further exposition of the above rule it must be known that the quarter of the wind (point of the compass) the vessel takes as its course, starting from the Cape Verde islands at the end of the 370 leagues, will be distant from the western parallel or line seventy-four leagues at the rate of twenty per cent, and because the said quarter (of the wind-rose or compass) inclines towards the North sailing by it the different (increasing) elevation of the pole-star is clearly apparent, and the said seventy-four leagues comprise three degrees and a third of latitude, very nearly.

7. It is, moreover, to be noted that pursuing the above rule it is necessary to give to each degree seven hundred stadia, according to Strabo, Alfragano, Teodoici, Macrobi, Ambrosi and Eurlsthenes (Eratosthenes); since Ptolemy gives only five hundred stadia to a degree. And I say further that there is another method of finding the said terminus according to the practice and science of mariners, and it is as follows.

8. First, let the sovereigns our lords and the King of Portugal take twenty mariners, ten for each side, the best to be found, and conscientious men, and let them start in one vessel from the Cape Verde islands on a westerly line, and let each one of the said mariners note with great care on his chart, every six hours, the course the vessel makes according to his judgment; and, having been bound under oath, let none of them communicate his opinion to another until the first of the mariners who in his judgment finds himself at the said terminus shall state so to two captains—men of reputation, put on board the said vessel by the will and accord of the said sovereigns. And let the said captains then take the opinions and judgments of the other mariners and, if the rest agree with the first who finds himself at the terminus, let them take his decision as conclusive and final as to the said terminus; and if they do not agree with the first, let them take the opinion and judgment of the majority, and after agreeing, let them change the course on a straight line towards the Antarctic pole, and everything they find on the left hand towards Guinea shall belong to the King of Portugal in the manner above stated.

This second method is uncertain and may be erroneous because it is based on the simple and sole judgment and opinion of mariners, and the first rule is very certain, (that one) by the elevation of the North star, as is shown above.

9. And if in this my decision and opinion any error appear, I will always defer to the correction of those who know and understand more than I, especially to the Admiral of the Indies, who at the present time knows more than any other person in this subject, for he is greatly learned in the theory and admirably practical, as his famous achievements demonstrate; and I believe that Divine Providence holds him as elect to carry out its great mystery and service in this undertaking, which I believe is the disposition and preparation of that (result) which, hereafter, the same Divine Providence will manifest to its great glory—the salvation and good of the world.

10. Here is shown the navigation of the Admiral of the Main-land. Ptolemy in the eighth book *de situ orbis* says at chapter five: