

How Long Spans the Inhabited World

By M. Baizerman

A chapter from my book, "The Enchanting Encounter with the East", compares the estimations of the spread of the inhabited world carried out by the scholars of Ancient Greece and the European Middle Ages: Strabo, Eratosthenes, Posidonius, Marinus, Claudius Ptolemy, Martellus, Toscanelli, Behaim, Columbus

"Whoever wants to gain a vivid picture of the places and their relationship to each other--distance and location, longitude and latitude, height and depth, who wants to understand their variation in heat and aridity, cold and damp, color, taste, and smell, beauty, ugliness, charm, fertility, and barrenness... cannot understand all this without clear pictures of the size and shape of the habitable earth and its divisions or climatic zones." (Roger Bacon) (32)

The principal argument that flared up the ancient community of scholars referred to the extent of the inhabited world. Strabo of Amaseia, the Greek explorer and historian, who lived in the transition between BCE and CE, imposed upon a geographer the primary task of understanding the true size, shape, and character of the "human planet" relative to the entire earth. (33)

To achieve this goal, a researcher had to focus on the ecumene, omitting the fringes and unfamiliar regions of terra incognita: "the geographer undertakes to describe the known parts of the inhabited world, but he leaves out of consideration the unknown parts... as he does what is outside of it". (34) These "blank spots" on the map, confined within unsettled territories of deserts and steppes, seemed both unattainable and culturally underdeveloped. They emitted warning signs not only in a spatial but also in an existential sense.

Ancient artists and philosophers rendered our world a far-flung island encompassed by the treacherous waters of the Ocean Sea. What lay beyond the shoreline was anyone's guess that should not bother a qualified specialist since his expertise was derived from travel accounts supported by scientific evidence. Military campaigns served as an additional source of data: "The spread of the empires of the Romans and the Parthians has presented to geographers of today a considerable addition to our empirical knowledge." (35)

A mapmaker could draw this spacious enclave by connecting its farthest tips: "joining with a straight line the extreme points reached on the coasting voyages made on both sides of the inhabited world." (36) A practitioner would focus on the dry land, depicting its major rivers and main mountain ranges; he took no interest in the sea except for spotting populated islands.

Geography owes its name to Eratosthenes of Cyrene, who baptized a new discipline. An outstanding Greek scholar and curator of the Library of Alexandria, he adjusted his virtual model of the Earth along the prime parallel and meridian, which intersected on the island of Rhodes in the Aegean Sea.

His ecumene occupied the Northern Hemisphere, whose northern edge lay on the parallel of Thule (66 degrees North), a legendary island in the extreme north, while its southern margin extended as far as the Cinnamon country, (12 degrees North) in southern Sudan, close to the mouth of the Red Sea, and a mysterious island of Taprobane (Sri Lanka), off the coast of India. (37)

The geographer's main meridian ran through Meroe, Alexandria, and Rhodes. His principal parallel of 36 degrees North connected its western and eastern confines from the Pillars of Hercules (Strait of Gibraltar) to the anonymous eastern capes of India through the whole length of the Mediterranean Sea and via the Caspian Gates and the lofty mountain ranges of the Taurus and Imaus (Himalaya). This imaginary partition line passed through an unknown bulge protruding from the littoral of the Eastern Ocean, close to the fictitious delta of the Ganges River. (38) It crossed the whole "human planet", cutting it into two equal parts, and marked the length of the inhabited world.

Ancient geographers often confused placenames and used bombastic statements to report dubious evidence. Diodorus of Sicily considered the unbroken mountain wall as the most remarkable feature of Asia: "from the Cilician Taurus a continuous range of mountains extends through the whole of Asia as far as... the Eastern Sea" [the South China Sea]. (39)

Eratosthenes fixed the maximum north-to-south breadth of the habitable earth (north-south extent) at 38,000 stadia (slightly above 7,000 kilometers) and its extreme length (west-to-east stretch) at 78,000 stadia (about 14.5 kilometers). (40)



Image 7: The Reconstructed World Map of Eratosthenes

<http://www.myoldmaps.com/maps-from-antiquity-6200-bc/112-eratosthenes/>

The known world of Posidonius the Stoic looked like a slingshot: "broad in the middle from south to north but narrowing to east and west". (41) He also chose the Rhodes parallel as his fundamental latitude and calculated the length of the inhabited area from the "bulge of Europe" (Cape St. Vincent, Portugal) to a fancy promontory on the eastern coast of India. (42) This span measured 70,000 stadia (nearly 13,000 kilometers), making up half of the entire circumference: "he suspects that the length of the inhabited world, being about seventy thousand stadia, is half of the entire circle on which it has been taken." (43)

In defining the breadth of the ecumene, he was less generous than his predecessor, excluding both Thule and Taprobane. The only significant islands that counted were Britain and Ireland. The northern rim passed through the shores of the northern sea. The southern fringe connected the ridges of the Atlas Mountains, the rapids of the Nile, the Horn of Africa with the mouth of the Red Sea, and the coastline of the Southern Ocean.

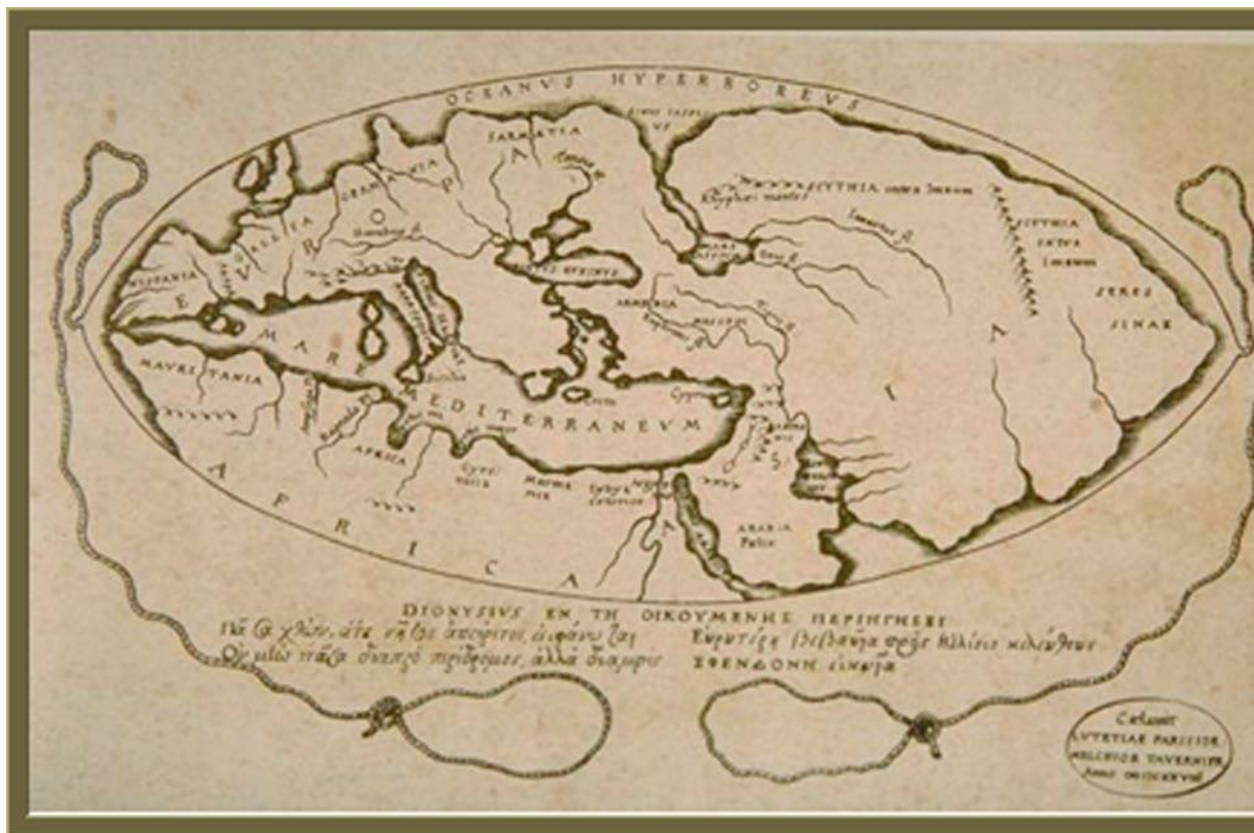


Image 8: The Reconstructed World Map of Posidonius

<http://www.myoldmaps.com/maps-from-antiquity-6200-bc/114-posidonius/>

The Hellenistic geography, which reached its culmination by the second century CE, put forward two distinct approaches based on Posidonius' concept of the "dwarf Earth". Both accepted the parallel of Rhodes as the basis for measuring the extent of the inhabited landmass. Both agreed on taking 400 stadia (74 kilometers) for a degree on this latitude, counting its scope equal to 144,000 stadia (26,640 kilometers). Either of them expanded the East-West stretch of the known world from the Fortunate Islands [the Canaries] to Sera, the capital of Serica [the Silk Land], a mysterious territory at the extreme Orient beyond India. Each of them tightly packed the globe into a grid of coordinates.

Both scholars differed in the estimation of the longitudinal extent of the world: whereas Claudius Ptolemy claimed that it reached about 180 degrees (72,000 stadia or less than 13.5 kilometers), his opponent, Marinus of Tyre, bet on 225 degrees (90,000 stadia or over 16.5 kilometers).

Ptolemy's opponent measured the latitudinal breadth as 87 degrees or 43,500 stadia (over 8,000 km) from Thule (63 degrees North) to Agysimba (an

anonymous territory in South Africa) and the promontory of Prasum, on the continent's eastern coast, in Mozambique, at 24 degrees South. (44) He stopped only ten latitudinal degrees from the southern tip of Africa, unsuspecting either how long extended the huge tract of land south of the equator or whether it could sustain the human population or not.

In the late fifteenth century, these rough estimations culled from classical sources were reconsidered by the leading European cartographers who engaged in mapping recent European maritime discoveries, matching them with the vibrant travelogues of the east-bound globetrotters.

One of these practitioners, Henricus Martellus, expanded the stretch of Eurasia to 230 meridian degrees (from Lisbon to China eastward). Besides, the Occident gained ten degrees after the inclusion of the Canary Isles, while the Orient benefited 25 degrees on behalf of Marco Polo's report of the island of Zipangu (Japan), off the coast of Cathay (northern China): "Zipangu is an island in the eastern ocean, situated at the distance of about fifteen hundred miles from the mainland". (45) On his world maps created in 1489-1490, on the eve of Columbus' epical discovery, the inhabited world spans 265 longitudinal degrees (over 19.500 kilometers). (46)



Image 9: The World Map of Henricus Martellus

<http://www.myoldmaps.com/late-medieval-maps-1300/256-henricus-martellus/>

Martellus was in the good company of cartographers who stretched up the length of the "human planet" almost to the limit. His colleagues, Paolo Toscanelli and Martin Behaim, agreed to extend Eurasia to 230 degrees (over 17,000 kilometers) and 234 degrees (nearly 17.5 kilometers) correspondingly.

The final step was undertaken by Christopher Columbus, a seafarer responsible for one of the worst blunders in the history of the world's discoveries. An upstart businessman, he took advantage of the confusion that reigned in the European intellectual circles around the issue of the length of the known world. He was the right person to serve two masters and possessed enough stamina to convince his entrepreneurs to put his "wild" theory, which contradicted the opinion of an honorable board of royal advisors, into practice. He succeeded by borrowing the lowest measure of the earth's circumference from D'Ailly (just above 30,000 kilometers) and the broadest extent of the ecumene from such cosmographers

as Martellus, Toscanelli, and Behaim, seasoning their estimations with his fantasies.

Table 4: The Extent of the Inhabited World According to Ancient and Medieval Scholars (in kilometers)

Geographer	The extent of the inhabited world
Posidonius	12,950
Ptolemy	13,320
Eratosthenes	14,430
Marinus	16,650
Toscanelli	17,070
Behaim	17,316
Martellus	19,610

Notes:

(32) J. Hackett, (ed.) Roger Bacon and the Sciences. (Leiden: Brill, 1997), 203 and 205

(33) G. Kish, (ed.) A Source Book in Geography, (Cambridge: Harvard University Press, 1978), 96

(34) J.R.S. Sterett, (ed.) The Geography of Strabo, vol. 1, 2:5.5. (London: William Heinemann, 1917), 433

(35) Ibid, 49

(36) Ibid, 433

(37) The 12th parallel North passes through Ethiopia, Somalia, the Horn of Africa, the Gulf of Aden, the Arabian Sea, and India at Kerala.
http://en.wikipedia.org/wiki/12th_parallel_north

(38) C. McPhail and K. Cameron, *Reconstructing Eratosthenes' Map of the World*. (Dunedin, University of Otago, 2011), 65-66.

(39) D. Panchenko, "Scylax' Circumnavigation of India and Its Interpretation in Early Greek Geography, Ethnography, and Cosmography". *Hyperboreus*, vol.4 (1998), Fasc.2, p.240

(40) McPhail, 60

(41) I. G. Kidd, (ed.) *Posidonius, Volume 2. The Commentary*. (Cambridge: University Press, 2004), 717

(42) The 37th parallel North extends from Cape St. Vincent, Portugal to Shangdon, a coastal province in East China. The maximum length of Eurasia on measures 131 degrees (14,583 kilometers).

(43) Sterett , 2:3.6, 393

(44) The 24th parallel South crosses Namibia, South Africa, Mozambique, and Madagascar. http://en.wikipedia.org/wiki/24th_parallel_south

(45) *The Travels of Marco Polo*, Book III, chapter II, (New York: Cosimo, Inc., 2006), 262

(46) The 28th parallel North stretches from the Canary Islands to Zhejiang, a southwest coastal province of China, over 12,690 kilometers. It does not meet Japan.