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Preface

There is no shortage of recent profiles of the history of ancient geography, some good, some less so, but in any case useful as initial information on the subject. The oldest treatments, however—wide-ranging, comprehensive in the wealth of topics and depth of analysis—have certainly not been supplanted (the mind goes above all to the histories by Ernst Hugo Berger\(^1\) and James Oliver Thomson,\(^2\) if we choose not to look back to the history written by Albert Forbiger,\(^3\) which remains valid in various ways).

In planning this volume the editors certainly did not intend to follow models such as those cited; this is an aim they were never tempted to pursue—too ambitious in some respects, but above all far from the vision that inspired their project, linked as it is with an evaluation of the current requirements of studies in the field. From this came the idea of a volume that seeks to privilege some aspects not frequently dealt with in usual treatments, at the expense of a systematic and complete exposition, and which together grant the warranted visibility to the methodological profiles of the approach used towards the discipline.

It is in this light that the “angle” and the choices that characterize the Companion are to be considered, that is to say the presence of particular topics—such as the onomastics of some regions, the borders of states, the Pythagorism, the sacred itineraries, the sea, the Holy Land, the systems of measurement—alongside subjects and themes that have represented well known moments and crucial phases in the history of ancient geographical thought (Eudoxus of Cnidus, Dicaearchus, Eratosthenes, Agatharchides, Hipparchus, Agrippa, Strabo, Pliny and Solinus, Ptolemy, the Tabula Peutingeriana). The need for a historical vision is obviously present throughout the volume, and it assumes its fullest expression where we see the fertile roots of conquests made by ancient man, from the Ionian labour behind Herodotus’s Persians, to Alexander the Great’s “turnaround”, to the exploration of the individual regions (Iberia, Pontus).

As editors, it is our desire that the reader might find, in addition to clear and concise information on a wide range of subjects, also satisfactory answers to many questions, as well as new stimulations for reflection.

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1 Berger 1903\(^2\).
2 Thomson 1948.
3 Forbiger 1842–1877.
Moreover, we are pleased to express our gratitude to Anne Kolb, who organized a conference in Zurich in September 2013, which proved to be most useful for our work on this Companion.

Further thanks go to Ivan Matijašić for help with the indices and for checking many references.

Serena Bianchetti
Michele R. Cataudella
Hans-Joachim Gehrke
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PART 1

Geography before Geography
CHAPTER 1

Persian Geography and the Ionians: Herodotus*

Reinhold Bichler

1 Herodotus and the Ionians: The Shape of Earth, the Continents and the Seas

Strabo commences his comprehensive Geographica by giving a brief history of this discipline, which he rates among the concerns of the philosopher. There is no mention of Herodotus in this outline although Strabo repeatedly refers to him in his comments on the various regions. It is Homer that he acknowledges as the forefather of geography. After him, he calls attention to two Ionian scholars: Anaximander of Miletus and his fellow countryman Hecataeus. In doing so, he follows in the footsteps of his ideal, Eratosthenes (1.1.1). According to the latter’s judgement, two particular achievements distinguish these two: “Eratosthenes declares…that Anaximander was the first to publish a geographical map (γεωγραφικὸν πίνακα), and that Hecateus left behind him a work (γράμμα) on geography” (1.1.11).¹ However, our knowledge of the geographical conceptions held by the Ionian scholars is actually quite fragmentary. So the criticism that Herodotus levels at his predecessors is a valuable testimony. This is one reason why he plays an important role in the research of ancient geography. But above all, Herodotus’ Histories, for the first time, offer the possibility of grasping a concrete conception of the world in the sense of a geographical mental map in its entirety as well as in its many details. Herodotus had a keen awareness as to the boundaries that allow reasonably safe conclusions about the world in a geographical sense. He refrained from speculating on the shape of the earth as a whole and its position in the cosmos. These issues, however, had played a significant role in the beginnings of geography. According to the testimony left, this applies in particular to Anaximander.

Anaximander conceived of the Earth as a body floating in space: “The earth is aloft and is not supported by anything.” (D.-K. 12A11).² In his model, the axis of the earth was at an oblique angle relative to the axis of the heaven and the orbits of the celestial bodies. Whether or not he also positioned the solstices

* English transl. by Franz Pramhaas.
1 Transl. Jones 1917.
and equinoxes of the sun on the surface of the earth is no longer so certain. Anaximander compared its shape with a cylinder: “He says that the earth is cylindrical in shape, and its depth is one-third its breadth.” (D.-K. 12A10). Seen from above, a river, Okeanos, surrounded the earth like a ring. This conception can be traced back in Greek tradition as far as Homer. The description of the world as it is represented on the shield of Achilles bears impressive witness to it. (Il. 18.607f.) The idea that here a cosmological concept derived from ancient Near Eastern tradition was adopted and transformed has been stated frequently since the discovery of the so-called Babylonian Map of the World. Unfortunately, no conclusive testimonies as to what the map ascribed to Anaximander exactly looked like have survived. In any case, a circular shape of the earth and the outlines of the continents and seas can be expected. Herodotus’ polemic is indicative of this: “I cannot help laughing at the absurdity of all the map-makers—there are plenty of them—who show the Ocean running like a river round a perfect circular earth…” (4.36.2). However, Herodotus does not mention the addressees of his criticism by name. So it is very much assumed that his criticism is primarily aimed at Hecataeus.

Hecataeus had written two works, which have only survived in fragmented form: a systematic treatment of mythographic and genealogical tradition and a description (περιήγεσις) of the earth. The widespread assumption that his work was accompanied by a map has not been clearly verified, though. Reconstructions of a “map of Hecataeus” are on the one hand based on a combination of Herodotus’ references to older maps and on the other on the analysis and evaluation of the citations from and references to Hecataeus in the works of later authors. These include, first and foremost, the Byzantine lexicographer Stephanus of Byzantium. Irrespective of their individual authorship, the reconstruction of these early maps at any rate remains a matter of conjecture.

Herodotus put forward his views on what can be said about the shape of the earth and its division into continents and seas by disputing older or competing notions. From the very outset, the focus of Greek geography was directed

4 D.-K. 12A10 = MacKirahan 2010² no. 5.11.
8 Cf. Thomson 1948, 99 with fig. 11, on the Map of Hecataeus: “Much of the drawing is very conjectural.”
towards the Aegean region. Increasing navigation of the Mediterranean (which did not have a set name) and the Pontus Euxinus (Black Sea) led to the emergence of a fixed mental orientation line along the waterways. It corresponded roughly to an imaginary line from sunrise to sunset. Seen from west to east, it ran from the Pillars of Heracles (Strait of Gibraltar) along the Mediterranean to the Hellespont, from there across the Propontis (Sea of Marmara) and the Bosphorus into the Black Sea as far as the mouth of the river Phasis (Rioni). This conception had already been determinant for Hecataeus.9 Herodotus developed it further, distancing himself from tradition in the process.

In his understanding, the imaginary borderline between the northern and southern half of the earth continues beyond the Phasis in an easterly direction. It runs along the southern edge of the Caucasus and the Caspian Sea, following the river Araxes, which finally separates itself into 39 branches and ends into marshland. Another branch of the Araxes flows into the Caspian Sea. The latter is—quite correctly—conceived of as an inland lake (1.202.4; 203.1; 204.1). In Herodotus’ conception, the Maeotis (Sea of Azov) mentioned here and elsewhere seems inordinately large (cf. esp. 4.86.4).10 Even the information about the river Phasis is vague. It remains unclear which of the rivers known to us are being referred to by the name of ‘Araxes’. Herodotus subsumes all the northern half of the continental landmass divided by this stretch of water under the geographical term ‘Europe’. This sets him apart from concepts, which regarded the Phasis or the Tanaïs (Don) as the border between Europe and Asia (4.45). In his opinion, it was not possible to say to what extent Europe was surrounded by water (3.115; 4.45.1). Herodotus considers the extreme north of Europe inaccessible (4.16), not least because of the heavy snowfall (4.31; 5.9.1; 10) and rejects the traditional view of the earth as being encircled by Ocean as unfounded (2.21; 23; 4.8.2; 36.2). For this reason, he does not believe the Caspian Sea to be an indentation of the Ocean. The question as to how far the Atlantic stretches to the north is left completely open.

Herodotus judges the continent of Europe, in both length and width, to be larger than the entire southern half of the earth, which he sums up under the geographical term ‘Asia’ (4.42.1; 45.1). He justifies the extension of the name ‘Asia’ with his knowledge about Egypt. Herodotus deems it wrong to regard the Nile as the border river between the continents of Asia and Libya. Otherwise, the unity of the country of Egypt, which had been created by the Nile’s natural slurry flows, would be ignored (cf. esp. 2.5; 10–12; 15–17). So it would be necessary

to include the whole of Libya, along with Egypt, into Asia (cf. 4.36–45). Arabia
in the south and Ethiopia in the southwest are the most remote inhabited
regions on this continent (3.107.1; 114–115.1). How far Asia extends to the east of
India, no one can say (4.40; cf. 3.98.2). At any rate, in Herodotus’ conception,
the river Indus flows in an easterly direction (4.44.2) and then enters the sea
in the south, which was commonly called the Red Sea (4.37.1). Now, Herodotus
had inferred from the old tradition according to which the noble Ethiopians
live by the Okeanos (Il. 1.423; 23.205 f.) that Libya borders on a southern sea (cf.
3.17.1). So, in his conception, a sea encircles the entire south of the oikoumene,
encompassing the Atlantic, the Pillars of Heracles and the Mediterranean (cf.
1.202.4). Thus, in principle, it should be possible to navigate from the Indus
estuary around Libya (i.e. Africa) as far as into the Mediterranean.

Herodotus provides proof of this by drawing on expedition stories. He, for
instance, refers to the story of Scylax of Carianda. In the service of Darius, this
man is said to have sailed east on the river Indus, entered the sea and then
returned westward as far as into the Arabian Gulf and the Red Sea (4.44). Scylax
had written a report, of which only sparse fragments survive (FGrHist 709). It is
not certain whether Herodotus used this text. His version of Scylax’s voyage
does raise problems. Herodotus, in fact, did not yet have actual knowledge of
the Persian Gulf, but if the voyage had taken place as reported, Scylax would
certainly have discovered it. On the other hand, Herodotus knew that King
Darius had a canal built which facilitated voyages from the Nile-valley into the
Red Sea (2.158; 4.42). He probably also knew the Great King’s claim to have
opened up the sea route to Egypt to the Persians (DZc). This could have been
the inspiration for Herodotus’ version of Scylax’s voyage.

Another story that Herodotus relates is about a Phoenician fleet which by
order of the Egyptian king Necho is said to have sailed by way of the Red Sea
into the southern sea, surrounded Libya and returned to Egypt through the
Pillars of Heracles and across the Mediterranean (4.42). The authenticity of
the circumnavigation of Africa has always been a matter of controversy. The
information that, when circumnavigating Libya, the Phoenicians had observed
the sun on their right, that is in the north (4.42.4), does not serve as conclud-
ing proof. For this can be inferred from simple astronomical observations. The
phenomenon that at the time of the summer solstice the sun is positioned
in the north at midday can already be seen from just south of Aswan. There
is no need to circumnavigate Africa for this. Herodotus reports of two more
exploratory voyages to Libya’s coasts. One expedition, led by the Egyptian king

12 Cf. West 2012.
Sesostris, had set out from the Arabian Gulf, just as the Phoenician one did later on. The other, undertaken by order of King Xerxes and led by Sataspes, followed the coastline of the Mediterranean and the Atlantic. In striking similarity, the two expeditions, after a long voyage, arrived in a region where shoals forced them to turn back (2.102; 4.43). These three expedition reports, however, corroborate Herodotus’ geographical view of the world: with the exception of the narrow land bridge in Egypt, connecting it with Asia, Libya is surrounded by the sea on all sides (4.42.2). So, setting out from Egypt, it must in principle be possible to sail completely around Libya. But supposedly, this had been achieved only once.

Herodotus uses one more expedition story to illustrate the position of the continents. A group of young Libyans from a people called Nasamonians crossed forests and deserts and eventually, in the extreme southwest of the country, came upon a river which flowed eastward and contained crocodiles. The region was inhabited by small black people (2.32). This ties in with the narrative of Sataspes’ voyage. When going ashore in the southwest of Libya, the sailors are said to have seen very small people then (4.43). The story about the Nasamonians supports Herodotus’ assumption that the Nile, coming from the remote southwest of Libya, flows into an easterly direction and turns north in the south of Meroë (2.29–33). Herodotus imagines the course of the Nile to be symmetrical to the course of the Istros (Danube) in Europe. On a mental map, the estuary areas of the two rivers—in the Black Sea and the Mediterranean—would have to be marked on approximately the same “longitude”. Likewise, the source regions of the two rivers are thought to be located in about the same distance to the west, still well beyond the “degree of longitude” marked by the straights at the Pillars of Heracles (2.33–34; 4.48–49).

The imaginary north-south-axis from the mouth of the Danube to the Nile Delta corresponds to the course of the river Halys in Anatolia, which Herodotus imagined to be extremely narrow at this point. He deems it possible to cover the distance from the Black Sea to the Mediterranean off Cyprus within only five days (1.72). Towards the east, Anatolia is thought to be wider again. In Herodotus’ conception, the core area of Asia is then formed by a strikingly narrow strip of land which stretches from the river Phasis in the north down to the southern sea. It is, in fact, only inhabited by four nations, namely, from north to south, the Colchians, Saspires, Medes and Persians. This strip of land, too, constitutes a fixed point of reference in Herodotus’ mental map (4.37).

This strip of land is bordered in the east by a much larger area, which stretches from the Caspian Sea and the Araxes in the north to the sea in the south and extends to the east even beyond the inhabited regions of India. Yet, it remains uncertain how far this sandy desert area reaches to the east (4.40; 3.98.2). Two
peoples, which on Herodotus' mental map are placed on the same north-south-axis, represent an outermost landmark: the Massagetae to the north of the Araxes and the Issedonians, who settled far north of them (1.201). They can possibly be imagined on the same “longitude” as the Indian settlements in the territory of Paktyike (3.102).

Whereas the eastern extension of Asia remains undefined, Herodotus gives distinct outlines to the shape of those parts of Asia which are situated to the west of the strip of land mentioned above. He compares them with two peninsulas (ἀκταὶ διφάσιαι). Therefore, seen from this core area, Asia Minor appears as a peninsula which stretches to the west as far as the Aegean (4.38). A second—southern—peninsula encompasses Persia, Assyria and Arabia, and is bounded in the west by the Arabian Gulf and the Phoenician coast (4.39). It is connected with Egypt by a narrow land bridge. For this reason, Herodotus, as already stated, includes the whole of Libya (Africa) in this second land bridge and, as a consequence, in Asia (4.41).

### 2 The Geography of the Various Larger Regions and the Problem of the World Map

Just as is true for Herodotus' comments on the outer shape of the continents and his statements on the seas, the extent of the information provided in his description of the various larger regions of the oikoumene depends on the extent of the knowledge available at the time. As to the differences in the density and precision of his geographical explanations, there is still another significant reason: the particular relationship of the respective region to the central theme of the Histories. The work centres on the history of the great royal empires in Asia and their confrontation with the dominant Hellenic powers. As a consequence, Herodotus primarily focuses on the lesser known and exotic regions which had been seized by the Persian Empire or were presumptive goals of its striving for conquest, presenting them to his audience in special geographically and ethnographically themed accounts. For Herodotus, the geographical coverage of specific areas also involves the coverage of their residents’ diverse ways of life. Differences in economic habits and the capacity for political organisation imply different risks and chances in armed conflicts.

In order to facilitate orientation, Herodotus applies established procedures which were already to be found among the basic principles of older

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13 For details and further references see Bichler 2013b.
geography.\textsuperscript{14} They include route descriptions of country roads and sea routes. Their course is illustrated by an imaginary succession of stages (as linear as possible) and a simple indication of the cardinal directions. The description of river courses and coastlines also follows this principle. The highlighting of conspicuous landmarks reinforces mental orientation. The horizontal area of a territory can above all be visualised more easily by comparing it to geometrical shapes. The proven instrument of entire catalogues of peoples, including catalogues of combatants and registers of tribute payers, also serves to illustrate spatial dimensions. In addition, there are listings of clothes and weaponry typical of the country, beside various products. In all these cases, Herodotus was able to draw upon a rich tradition. It ranges from Homer to Hecataeus and Herodotus’ immediate contemporaries but also includes examples from the ancient Near East.

The various military projects of the Persian kings provide a suitable opportunity for more extensive geographical commentaries. Aryandes’ campaign into Cyrenaica, which was conducted at the behest of King Darius, does not only cast light on the Greek settlements in the region. It also offers the opportunity to describe Libya in greater detail. The extension of the continent towards the west, for instance, is illustrated by the catalogue of the indigenous peoples who, starting from Egypt, populated the north (4.168–197). Herodotus divides them into two large groups: nomads in the east and crop farmers in the west. Contrary to the case of the population in Scythia, where the grade of economic advancement decreases with distance from the influence of Hellenic settlements (cf. 4.17–27), Libya’s crop farmers live at a far greater distance from Egypt and the settlements in Cyrenaica than the nomads. Herodotus defines the river Triton and the lake of the same name, known from the myth of Jason and the Argonauts (4.178–179), as the boundary between nomads and tillers of the soil.

The cultural borderline that Herodotus marks here can no longer be pinned down in real-life geography. Furthermore, his description of the country and its people is becoming vaguer the further west he is looking (cf. 4.187–197.1). His comments on the southern expanse of Libya are also graded according to the degree of knowledge. The populated area in the north is adjoined by forests teeming with wild animals and deserts. Herodotus tells of a desert route which leads across the south. Starting from the Egyptian Thebes, it runs westward in stages of ten-day-journeys and continues even beyond the imaginary “degree of longitude” marked by the Pillars of Heracles (4.181–185).

\textsuperscript{14} Cf. on those principles Janni 1984; Gehrke 2007; Rollinger, and Ruffing 2013, esp. 135–138, with further references.
Herodotus estimates its distance from the Mediterranean at a travel time of 30 days (4.183).\(^{15}\) The description of the individual stage stops along this route as salt-hills with a spring of water makes one think of a kind of map on which oases were marked by corresponding symbols.\(^{16}\) The upper course of the Nile, whose banks the young Nasamonians reached, must be imagined to be still further towards the southwest, as far from Meroë, as the distance from Elephantine to Meroë. According to Herodotus’ calculation, a journey there, upstream from Elephantine, the southern border of Egypt, takes 56 days (2.29). The distance from Meroë to the sea by whose shores the long-lived Ethiopians dwell remains a matter of speculation. Herodotus, at any rate, intimates the enormous distance (cf. 2.30.1; 3.17.1; 25). So it is no coincidence that the Phoenicians who circumnavigated Libya took about three years for their voyage, which corresponds significantly with the duration—30 months—of Scylax’s expedition (4.42.4; 44.2).

From a purely geographical perspective, Herodotus uses the name Libya as an umbrella term which also covers Egypt. Nevertheless, Egypt is conceived of as a homogeneous cultural region which, due to its great historical past and its influence on Greek religion, is of eminent importance. This is also reflected by the wealth of geographical information about the country. But this abundance should not blind us to the fact that many of the measurements provided do not stand up to a reality test.\(^{17}\) Yet, Herodotus’ claim to convey an accurate portrayal of Egypt, based on the authority of Egyptian priests but especially his own eye-witness experience, remains remarkable. He states, not without pride, that he travelled as far as Elephantine on the southern border of Egypt (2.29.1). Up to that point, as he suggests, exact information about the course of the Nile could be given. Hence, he does not only provide details about the duration of the journey, starting from the Delta, but also indicates the distance to Elephantine in stadia (2.7–9). Exact specifications also relate to the extent of the Egyptian coast (2.6), and the distance from the sea to Heliopolis is compared to that from Athens to Olympia (2.7). In addition, there are rough calculations as to the extent of the Nile valley to the south of Heliopolis and the width of the mountain-range between the Nile valley and the Red Sea (2.8) as well as details on the length of the Red Sea and the distance between the Mediterranean and the Red Sea (2.11; 4.41).

Another noteworthy feature is Herodotus’ geological speculations. He assumes that in ancient times all of Egypt’s fertile land was restricted to the area

\(^{15}\) Liverani 2000.

\(^{16}\) Bichler 2013a.

\(^{17}\) For details see Lloyd in Asheri, Lloyd, and Corcella 2007.
of the Thebaid, whose circumference he also specifies (2.15.3). Once, the Nile valley adjoining to the north was a gulf, comparable in its dimensions to the Arabian Gulf, our Red Sea, which led into the southern sea. In the course of time, the sedimentation of the Nile, however, filled up all the fertile area between Memphis and the Delta. Herodotus surmises that this process did not take much longer than 10,000 years (2.11–15). In speculations of his own on the Nile’s annual summer inundations, he does not hold back with criticism of older and competing opinions on this notoriously contentious issue (2.19–27). Although he, too, fails to give the real cause, namely the summer monsoon rains in Ethiopia, his reasoning is undoubtedly ambitious.18

From a geographical point of view, the depiction of Egypt, occasioned by Cambyses’ conquest of the country, is among the most graphic and dense sections of the Histories. As to the description of the Asian countries bordering on Egypt, things are different. According to Herodotus’ conception, they would have to be comprehended as part of a large peninsula which extends from Persia to Phoenicia and also includes all of Arabia, whereas Libya, together with Egypt, only constitutes another part of this Asian peninsula (4.39; 41). Considered in its entirety, Libya is inhabited by only four peoples: the indigenous Libyans and Ethiopians and the immigrant Hellenes and Phoenicians (4.197). Similarly, Herodotus speaks of three nations who inhabit the region adjacent to Egypt, meaning Assyrians, Arabs and the inhabitants of “Palestine-Syria” (4.39). The position of the Phoenician cities on the coast of the Mediterranean is assumed to be known here. More detailed information on the Phoenicians is broadly scattered across the Histories, depending on the historical-political context. On specific occasions, southern Syria and the far northwest of Arabia are given a somewhat higher profile (cf. esp. 3.5–9). As the most southern country of the oikoumene, Arabia is deemed worthy of a separate excursus. Its geographical dimensions are left undetermined, though. Herodotus does mention miracle stories about the flora and fauna in the south, but he virtually takes no account of the local population (3.107–113).

The geographical positioning of Assyria, too, remains rather undefined. Herodotus correctly locates Ninus (Niniveh), the ancient capital of the Assyrians, on the Tigris (2.150). The river flows down from Armenia, which is situated above Assyria (1.194). To Herodotus, Babylonia seems to be a part of Assyria (cf. for example 1.178.1; 193.1). He provides a legendary portrayal of the monumental metropolis on the banks of the Euphrates and the customs and traditions of the Babylonians (1.181–200) but gives only few vague indications

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about the route to Babylon (cf. 1.178; 189). His description of the Royal Road, which leads from Ephesus to Susa, is in clear contrast to this. Herodotus reports exact details on the various stages and the duration of the journey; passes and rivers serve as landmarks. Thus, the Euphrates separates Cilicia from Armenia. Herodotus calculates the entire route to be 14,040 stadia (5.52–54). The royal cities of Susa in the district of Cissia and Ecbatana in Media represent the centre of the Persian Empire. As was pointed out above, the strip of land which reaches from the southern sea to the Phasis and is inhabited—apart from the Persians and Medes—only by the Saspires and Colchians forms a core area of Asia in Herodotus' mental map (4.37). Only vague information is provided on the large territory adjoining to the east. With the exception of Bactra, the centre of Bactria (4.9.4; 9.113.1), and Kasparyros, Herodotus no longer gives names of cities located further east. Kasparyros was the point of departure of Scylax's voyage and is to be placed in the extreme northwest of India (3.102.1; 4.44.2) but can no longer be positively located. Herodotus offers a separate, more ethnographically-oriented, excursus on India as the easternmost country of the oikoumene, in topographical respects, however, he remains reserved (3.98–106).

The two large catalogues of the tax districts, organised by Darius, and of Xerxes's army and naval forces constitute a source for the geography of the Persian Empire which is troubled by specific problems (3.90–94; 7.61–99). The significance of these catalogues as a reflection of the representation of Persian rule will be dealt with later in part 3. Although they are organised according to geographical principles, it is particularly difficult to identify the nations and districts pertaining to the east of the Persian Empire. Herodotus makes mention of two peoples from the north of the empire outside these catalogues—owing to their military proficiency, namely the Sacae and the Bactrians. And there are also the Indians from the northeast of the empire (8.113; 9.31).

Opposite the eastern half of Asia—in its geographical relation to Europe—there are the settlement areas and grazing grounds of the steppe peoples. As to the sea and river borders which separate the two continents, Herodotus provides information whose accuracy diminishes with increasing distance from the Aegean. Exact measurements for the length and width of the Hellespont and the Bosphorus, the Propontis and the Black Sea are still given. He explains with pride how he himself calculated the distance from the Hellespont to the Phasis estuary on the basis of the time sailing vessels take (4.85.3–86). In his calculation, the distance amounts to a total of 11,110 stadia (4.86.2). The length and width of the Caspian Sea are only indicated by travel times for rowing

boats (1.203). Information on Lake Maeotis remains vague and contradictory (1.104.1; 4.3.2; 21; 116).

The disastrous campaign of the Persian king Cyrus against the Massagetae in the outermost east, to the north of the Araxes, offers him the opportunity to delineate the position of the Caspian Sea and this nation’s grazing grounds (1.201–204). In doing so, however, he remains sketchy. Darius’s expedition against the Scythians provides the occasion for detailed elucidations on the various Scythian nations and their neighbours. The geography of this region is dealt with in several attempts. Herodotus was obviously faced with the task of coming to terms with heterogeneous traditions. So his overall picture is far from being consistent. The charting of his information on a map poses major problems. The vastness of the inhabited territory is conveyed through the catalogue-like presentation of the individual Scythian nations and their neighbours (4.17–27; 4.99–101). Moreover, two catalogues of the country’s rivers create a network of orientation lines on an imaginary map (4.17–20; 47–58). There is also an overall description of the country, which, in greatly simplified contours, is to be perceived in the shape of a rhomboid. Herodotus also offers distances and particulars about travel times for the coverage of some routes within this quadrangle (4.99–101). In order to exemplify the position of that part of the peninsula which is inhabited by the Tauroi and takes up the southeast of Scythia, he draws comparisons which require knowledge about Attica or Iapygia, the region to the south of Brindisi and Tarentum (4.99).

The density of geographical information on the western part of Europe largely depends on the extent to which it was affected by war-related events under Darius and Xerxes or seemed potentially threatened by them. On occasion of the advance of the Persian troops and the subjugation of the coastal areas and their adjoining hinterland, Herodotus comes up with a range of detailed topographic information on Thrace (esp. 4.89–93; 7.108–116). Naturally, the historical events in the Aegean Sea as well as within continental Greece and Asia Minor provide a host of topographic information. Herodotus’ knowledge of the regions further away from the northern Aegean coast, however, is becoming rather unspecific. His ethnographic digressions on the Thracians and Paeonians hardly offer precise references on geography (cf. for instance 5.3–10; 15–16). The country to the north of the Istros is, in his view, largely uninhabited altogether (5.9).

The west of Europe was only marginally affected by the Persian Wars and their prologue. This may partly explain why this area is not systematically covered in his work. It is only occasionally that particular geographical aspects

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are highlighted. The Pillars of Heracles serve as a prominent point of reference, beyond which lie the legendary Tartessus and *Gadeira* (Cadiz) (1.163; 4.152; 4.8.2). The city of Pyrene in the land of the Celts represents the most westerly inland point. This is where Herodotus locates the source of the Istros. The rivers Alpis and Carpis, which come down from the land of the Umbrians and flow into the Istros, also mark some sort of “longitudinal line” (2.33; 4.49). In the Mediterranean, Iapygia, Sicily, Sardinia (imagined to be much larger; esp. cf. 6.106.2, 6.2.1) and Corsica are significant points on the way west. A catalogue of combatants under the command of the Carthaginian Amilcar (Hamilcar) in the Battle of Himera lists—beside the Phoenicians and Libyans—five indigenous peoples in western Europe (7.165). What attracts attention is that Herodotus does not make mention of any Phoenician, or Carthaginian, settlements on the Iberian coast or on the islands of Sicily and Sardinia. The only nation to the north of the Istros that Herodotus refers to is the Sigynnae, who live in the vicinity of the Veneti. They are located to the north of the Adriatic (5.9). Fanciful stories is not what Herodotus wants to offer. The lores of the Tin Islands in the west end of the Eridanus river, which is said to flow into the sea where amber comes from, are rejected by him as unproven (3.115).

Herodotus endeavoured to distinguish reliable or plausibly deduced geographical knowledge from unconfirmed sources and speculations. The graphic realisation of his geographical concepts as they can be deduced from his writings is no easy task.\(^{21}\) It would be a mistake to assume that a complete and overall consistent picture of the world could be assembled on the basis of the *Histories*, the more so as Herodotus himself maintained a critical distance to maps of the ancient world. But he did not only criticise map makers who believed to be able to capture the complete shape of the earth. He also addressed the problem that a world map of manageable size can only provide a very limited amount of geographical information. This is illustrated by the story of the map which Aristagoras of Miletus brought with him when garnering support from King Cleomenes in Sparta for a rebellion against the Great King Darius: “… a map of all the world engraved on bronze, showing all the seas and rivers… (. . . ἔχων χάλκεον πίνακα ἐν τῷ γῆς ἁπάσης περίοδος ἐνετέτμετο καὶ θάλασσά τε πᾶσα καὶ ποταμοὶ πάντες)…” (5.49.1). By means of this map, Aristagoras depicted the settlement areas of particular nations and the riches which could be conquered on the campaign to Susa. Only when he made the mistake of also (quite accurately) indicating the duration of the route to Susa to be three months, did the hazardous nature of such a reckless venture become apparent (5.50). Aristagoras’ tablet of bronze was treacherous: It could

\(^{21}\) Engels 2013.
not even offer the wealth of information which the geographical and ethnographic catalogues of a Hecataeus had provided. It is the latter that Herodotus gives credit for having pointed out the risks of a rebellion to his countrymen: In doing so, Hecataeus had enumerated all the nations Darius ruled over (5.36). So the use of this map as a means of political manipulation was a dirty trick. In the end, Aristagoras might almost have achieved his objective by bribing the King of Sparta, had not the king’s little daughter intervened in time (5.51). To make up for it, Athens and its entire people’s assembly fell easy prey to him and his lures—this time apparently without his map (5.97). There is a bitter irony in this account, and it represents a vivid example of the political dimension of Herodotus’ geographical interest.

3 The Political Dimension of the Conceptualisation of Space. Herodotus and Achaemenid Representation of Imperial Power

The striving for dominance and its limits represent a central theme in Herodotus’ *Histories*. Thus the capture of space acquires a geopolitical dimension. From this point of view, Herodotus’ contribution to geography can also be seen as a reaction to Achaemenid representation of imperial power and the perception of geographic space developed in this context. The latter was initially based on a heritage of practical knowledge which had already been developed in the establishment of the Assyrian and Babylonian Empires. The administration of a large kingdom which comprises a diversity of territories and nations necessitates a considerable amount of knowledge, not least in geographic terms, and requires well-developed traffic routes for commercial and military purposes. Under the new Persian rule, the necessary know-how and the physical infrastructure were further cultivated. Not without good reason did Herodotus have great admiration for the Persian network of roads and courier system, the ἀγγαρήιον (cf. esp. 8.99). Elamite administrative documents from Persepolis indeed provide evidence of the extensive and intensive use and control of the road network. The routes mentioned encompass an area which, seen from Susa and Persepolis, extends as far as Bactria and India, to the Persian Gulf and Egypt. The local administrations were responsible for the safety and provisioning of envoys and the good maintenance of the

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transregional road network, as, for instance, is illustrated in an Aramaic document from Egypt.  

It goes without saying that successful military ventures require appropriate geographic knowledge. But it is still noteworthy that King Darius’s Bisitun-Inscription gives a number of geographical particulars in order to record the scope of his campaigns. The text especially provides exact dates and places of the various battles against the rebellious nobles. This is also the case if it is not the king himself but a vassal that fights the battle (DB § 25). Occasionally, such details as the description of the laborious crossing of the Tigris can be found (DB § 18). Most of these geographical details also survive in the fragments of the Aramaic version of the Bisitun-Inscription, which preserves eight campaign and twelve battle reports. These concrete accounts of campaigns represent a singular phenomenon in the corpus of the Achaemenid royal inscriptions, which is still oriented towards Assyrian and Babylonian traditions. After the war-ridden period in which Darius ruthlessly asserted his claim to domination, they were intended to document the consolidation of power and its religious foundation: It is Ahuramazda whose will and support Darius’s supremacy rests on.

The reign of the kings represented divine order. The Persian rulers did not consider themselves divine beings. Their position with regard to the supreme deities, however, was adjusted to the respective traditions in the regions ruled by them. At the same time, the theologically-founded, all-encompassing control of the territory was adopted into the royal titular. Cyrus’s capture of Babylon (539 BC) could be legitimised by the priesthood of Marduk as intended by the deity: “… he (Marduk) sought a just ruler to suit his heart, he took him by the hand: Cyrus, king of Anshan, he called, for domination over the totality he named his name”. Thus, the king took over the legacy of the Assyrian and Babylonian rulers. It reflected the ambition to extend

25 Grelot 1972, No. 67.
28 Cyrus Cylinder v. 12; Kuhrt 2007, 70–74.
29 Cf. the building inscriptions of Nebuchadnezzar II, esp. George 2011, 166–167 n. 76; “So I (Nebuchadnezzar) mobilized the teeming people whom my lord Marduk had entrusted to me and whose pastoral care the sun god had handed over me, all countries everywhere, each and every population from upper sea to the lower sea…”. On the corresponding Neo-Assyrian concept of rule over the oikoumene see Rollinger in Rollinger, and Ruffing 2013, 93–134.
his reign in all four directions. A similar legitimation of Cyrus's rule as an expression of Yahweh's will is given by the verses of Deutero-Isaiah. When Cambyses, Cyrus's son and successor, conquered Egypt (525 BC), he not only adopted the title of “King of Upper and Lower Egypt” but also the title “son of Re”. The full claim to world domination appears in the hieroglyphic inscription on the statue of Darius which was found in Susa but originates from Egypt: in it, Darius is addressed as “The perfect god, . . . whom Atum lord of Heliopolis has chosen to be master of all the sun's disc describes, because he knows that he is his son, his caretaker”.

Catalogues of countries and nations which are under the king's dominion serve to demonstrate the extent and scope of his reign on a symbolic level. The first catalogues occur in the Bisitun-Inscription. They comprise 23 units. A pictorial equivalent can be found in the reliefs on the eastern Apadana stairway in Persepolis. The tribute bearers from all the regions of the empire represented there are also organised into 23 groups. The number of representatives of the subject nations grew and reached 30 units still under Darius. His tomb at Naqs-i-Rustam directly points to the link between word and image, between catalogues of countries and peoples and the symbolic bearers of the royal power, namely the 30 bearers of the platform which the king is enthroned on, represented in a bas-relief: “If now you should think: ‘How many are the countries which king Darius held?, look at the sculptures (of those) who bear the throne”.

The ways in which all the countries and nations of the empire contribute to the king's reign, each in their specific manner, are illustrated in the building inscription of Darius's palace in Susa. It lists valuable goods from a range of countries as well as artistic and technical achievements of the various residents of the empire and exemplifies the diversity of the territory under domination for all to see. Darius's claim to sovereignty was maintained by his successors.
The title “king of countries containing all kinds of men”, in honour of Xerxes, expresses this diversity of nations within the unity of the empire concisely.36

The arrangement of the various countries and peoples in catalogues and bas-reliefs occurs in several variants but reveals a concrete geographical conception of the world, with Persia, Media and Elam at its centre.37 From there, the fringe zones of the dominated world are still in view. Reduced to a simple formula, the “four quarters” are staked out: “This is the kingdom which I (Darius) hold, from the Saca who are beyond Sogdiana, from there as far as Kush, from the Indus as far as Sardis…” (DPh).38 In principle, the dominion of the king, granted by Ahuramazda, stretches as far from Persia and Media as space seems controllable. “A great (god is) Auramazda, who…bestowed on Darius the kingship over this wide earth, in which are many lands: Persia, Media and the other lands of other tongues, of mountains and plains, from this side of the sea to that side of the sea, from this side of the desert, to that side of the desert.” (DPg).39

The further expansion of the empire under Darius was connected with the theoretical claim to, in principle, unlimited dominion. This now also included naval supremacy. Darius prides himself on having facilitated navigation from Persia to Egypt by constructing the canal between the Nile valley and the Red Sea.40 The Mediterranean does no longer constitute a limit to the claim to rule, either. Following the “Ionians of the mainland and (those) by the sea”, Darius also counts “the countries beyond the sea” among his domain (DPe § 2); so does Xerxes, referring to the “Ionians who dwell by the Sea and (those) who dwell beyond the Sea” (XPh § 3).41 With his report on a campaign against the “Saca with the pointed hat”, Darius even boasts that he crossed a sea (draya) (DB § 74). This probably refers to the Amu Darya, which, in the imagined northeast, represents the Upper Sea.42 In the northwest, this is matched by his claim to rule over the Saca on the other side of the sea (DNA § 3; DSe § 4).

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36 XPa § 2 Kuhrt 2007, 581.
37 Wiesehöfer 2007; Dan 2013.
38 Kuhrt 2007, 476; cf. DHa § 2.
39 Cf. the Babylonian inscription DPg; Kuhrt 2007, 483.
40 Cf. the Chalouf Stela, DZc §3: “King Darius proclaims: I am a Persian; from Persia, I seized Egypt. I ordered this canal to be dug, from a river called Nile, which flows in Egypt, to the sea which goes to Persia. So this canal was dug as I have ordered, and ships went from Egypt through this canal to Persia, as was my desire”; Kuhrt 2007, 486. On the royal ideology within the text see Lloyd 2007.
41 DPe § 2: Kuhrt 2007, 486; XPh § 3: Kuhrt 2007, 305.
42 Rollinger 2014, esp. 197–200, with further references.
The aspiration to global dominance over space is an essential aspect of Persian royal ideology. From an opponent’s perspective, this claim to dominance could easily be taken quite literally and, therefore, be critically rejected. This happened in the perception and interpretation of the Hellenes’ success in the Persian Wars: This success was not measured by the factual events and the opponent’s actual war objectives but claimed as a victory over limitless, hubris-induced striving for conquest. Herodotus, too, conveys this point of view. Despite the abundance of military and economic resources which Darius and Xerxes had at their disposal, they were not able to subdue Hellas.

The list of tax districts which Darius is assumed to have established (3.90–94) and the catalogues of troops which Xerxes led against Hellas (7.61–99) are intended to demonstrate this welter of resources. To what extent they are based, in their essence, on Persian sources is uncertain and controversial.43 The description of the tax districts corresponds to Herodotus’ geographical and ethnographic perception of the centre and the western half of the Persian Empire. For the eastern regions, it provides a number of more or less unknown names of peoples which possibly display geographic knowledge of the Persians that Herodotus was no longer able to grasp correctly.44 But at the same time it illustrates the expectation so characteristic of Herodotus’ conception, namely that the riches of the countries dominated by the Persians are increasing the further south and east one gets.45—The troop-catalogue supplies a largely identical body of names of peoples and countries.46 Once again, it is effective in visualising the expanse and abundance of the space controlled by the Great King. Its literary reference to the Iliad is evident. That Hecataeus already provided a catalogue of this kind is hinted at by Herodotus himself (5.36). This, however, does not rule out an indirect reference to Iranian geographic knowledge.47

In Herodotus’ Histories, every excessive attempt at striving for domination is ultimately doomed to failure; this should also be understood as a critical commentary on Athens’ policy at the time of the Peloponnesian War. The Persian kings’ failed plans of conquest, however, supply the illustrative example for an instructive lesson. Herodotus utilises their depiction to reduce the claim to

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43 Cf. West 2011, esp. 263–265, with further references.
44 Dan 2013, esp. 110–115.
45 Ruffing 2009; Ruffing 2011, esp. 86–94.
46 On the possibilities identifying the different peoples listed in the two catalogues with the ones mentioned in the Persian texts see Asheri, Lloyd, and Corcella 2007, 481–496 and 538–541; Kuhrt 2007, 527–529.
47 Dan 2013, esp. 106–110.
sovereignty as it is expressed in the Persian royal ideology to absurdity. Cyrus suffers a fatal defeat in the war against the Massagetae in the far northeast (1.201–214). Darius emerges relatively unscathed from his expedition against the Scythians in the northwest (cf. esp. 4.131–142). By crossing the Araxes and the Istros, respectively, both had made a fatal mistake. Cambyses’ plans to subdue the Ethiopians living by the southern sea and the Ammonians and Carthaginians in the southwest exceed all bounds and end in disaster (3.17–26). Xerxes reaches the height of presumptuousness when he lays claim to ruling over all the countries the sun shines on (7.8 β-γ). In Herodotus’ scenario, his campaign against Hellas was ultimately part of his quest for global supremacy (cf. 7.53.2), but the very crossing of the Hellespont proved to be the crucial step towards a foreseeable debacle.

The boundary formed by the Hellespont plays a decisive role in Herodotus’ dramaturgic composition. The space to either side of the Aegean Sea is not only the central location of the final war-related events, which his account is heading towards right from the beginning, but also the centre of geographical orientation. The border between Europe and Asia runs through the Hellespont. It forms the geopolitically critical segment of a long borderline, which, in Herodotus’ conception, runs from the west of the Mediterranean into the Black Sea and then heads on further east. It is, by and large, thought of as a north-south border, not as an east-west one.—Herodotus’ notion of Europe is clearly differentiated. When used in the narrow sense, the term still preserves an older meaning: then Europe refers to the region through which, coming from the northeast, across Thessaly, Hellas can be reached (6.43.4; 7.8b; 10b; cf. 3.96.1; 7.126). In a broader sense, the term denotes the countries which Xerxes and Mardonius, after the hoped-for victory over Hellas, would have liked to subdue (7.5; 8c; 50; 8.108). Finally, as a continent, the term Europe covers the entire landmass lying opposite Asia. In spite of the geopolitical dimension of the imagined boundary between Europe and Asia, the Hellespont, Herodotus’ concept of Europe remains largely neutral.49

48 On the history of the geographical concepts of Europe see Berger 1907.
49 Cf. Prontera 2009; Rollinger, and Ruffing 2013, esp. 147–150 with further references.
CHAPTER 2

The Sea of the Greeks and Romans

Pietro Janni

From the start, Greek geography necessarily consisted of thalassography in equal measure. If doing geography means building up a picture of the earth’s surface which goes beyond what is immediately perceptible, or within the range of short journeys, then for the Greeks geography meant first and foremost the interplay between land and sea, the observation and investigation of how sea and land interacted and of how the one penetrated the other. Few parts of Greece are located far from the sea, and its mountainous interior tends to push human settlements towards the coast. The Greeks settled on the myriad islands and larger or smaller peninsulas which surround the mainland or project from it, forming coastal patterns, which challenge recognition.1 And lastly, the colonial expansion of the Greeks was exclusively a maritime phenomenon, a migration which stopped at the coast, if not on the offshore islands.2 The first great opposition in which Greek geographic thought, in its origins, articulated the world was an opposition of continents separated by the sea: Europe and Asia were the names first given to the opposite shores of the Aegean.

This inevitable primacy of the sea in Greek geographical thought was recognized by Strabo, who expressed it in the clearest of terms: “The sea delineates (geographei) the land and gives it shape, forming gulfs, open expanses and narrow straits, and also isthmuses, peninsulas and promontories.” Only afterwards does he add: “Also rivers and mountains serve the same purpose.”3 There are many ways to create a system of coordinates, and before the emergence of scientific geography with its parallels and meridians, it was the coastline itself which provided the Greeks with their principal geographical coordinate, the axis of their system of orientation and reference.4

In Strabo’s day the science of geography had existed for a good while; almost three centuries earlier, Eratosthenes (275–195) had measured the terrestrial meridian, that is, the size of the globe, achieving a precision which, though

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1 Kowalski 2012, 139–146, “Défis de la représentation des espaces maritimes”.
2 Boardman 1964; Braccesi 2003.
3 Strabo 2.5.17.
4 On the theme of ‘the land viewed from the sea’, examining one particular case, Prontera 1996c; Bianchetti 2008, 16–17.
impossible to determine with certainty, was nevertheless certainly surprising, and anyway he had done this by means of a perfectly scientific method. Yet this geography, theoretically so advanced, continued to be based for the most part on a heritage of measurements drawn from experience at sea. The first virtual line traced by Greek science on the earth’s surface, around which they could organize geographical space, was the famous diaphragma of Dicaearchus (350–290), which coincides essentially with the longitudinal extension of the Mediterranean along the parallel 36° N (with some error), and Eratosthenes’ famous map was constructed around a basic parallel and meridian, in which much of the space was occupied by the sea. The measurement of distances was based at first on practical experience of maritime routes, which for the Greeks remained indispensable. The distances between Rhodes and Egypt, between the Mediterranean ports of Gaul and Africa, were of key importance in drawing up the map, and coincided with major sea routes, on which they had accumulated centuries of experience that provided a sufficiently reliable estimate. Even in late antiquity, a periplus author, Marcianus of Heracleia, was still teaching how to convert these time data into spatial measurements, based on the distance covered daily by a ship sailing under various conditions. Thus ancient geography was born first of all from the practical experience of navigation, which was then rationalized by geometry.

1 Early Seafarers and their Ships

When speaking of the ‘sea of the Greeks and Romans’, and the importance that it had in their geography, it is essential to say something about their nautical skills, especially navigation in the strict sense, and of their ability to face the open seas.

Familiarity with coasts and experience of landfalls represent a form of practical, purely utilitarian knowledge, which does not amount to science and cannot yet be termed geography. To reach this level it is necessary to recognize the two-dimensional nature of the sea areas, i.e. to assemble the linear routes

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6 Arnaud 1993.
8 Marcianus of Heracleia (between 250 and 500 AD), E.Per.Men. 5.
10 Casson 1971.
of coastal navigation into a higher scheme, a network joining up the different parts of the puzzle into an organized whole that is more than the sum of its parts. In short, what is required is experience of navigation in the open sea: only this would create the cross-links between the coastal routes, and furnish the positions and shapes of the islands and peninsulas, which so richly characterized the backdrop of ancient civilization.

The Greeks must have mastered this level of navigation quite early on, notwithstanding the widespread prejudice whereby all the ancient seafarers were fearful coast-huggers. The sensation of the open sea, ‘sky and sea’, is already described in the *Odyssey*, on one of the occasions when the poet betrays himself, so to speak, and attributes to his heroes higher nautical skills than those rather poor ones that his archaizing manner normally grants them. At one point the poem describes a voyage from Crete to Egypt which does not fearfully follow the coast but manifestly cuts across the open sea. True, we are dealing with a fictional story, but the writer intends it to be credible and thus cannot go against ordinary reality. To sail across vast expanses of sea, where for days at a time the safer option of navigating by eye is not available, one needs a minimum of navigational skill, the art of knowing where one is and how to reach one’s goal.

About this we know little, partly because in all likelihood there is not much to know. We can safely rule out that the ancients possessed any device to gauge their speed and hence the distance travelled, not even the primitive but effective knotted rope (log-line) run out overboard, which as we know became widespread later on: indeed speed at sea is still expressed in *knots*. The assessment of distances was therefore based exclusively on estimates. The use of sounding lines, however, is clearly documented, and underwater archaeology has recovered some examples. Besides its obvious use to measure the water depth, it also served as a very primitive kind of fix, by bringing up samples of the seabed which gave a rough idea of the area where the ship was, at least in frequently visited waters. Herodotus tells us that this system was used by sailors bound for Egypt to estimate their distance from the coast.

The most important means of orientation was astronomical navigation. Already in the *Odyssey* we see it being used by the hero, in a very primitive form, when he attempts to return home from the island of Calypso in the boat.

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12 Od. 12.403–404.
13 Od. 14.245–256.
14 Hdt. 2.5.2; Casson 1971, 246.
15 Lorimer 1951; Le Bœuffle 1989; Pérez Jiménez 2011.
that he has built with his own hands. According to the instructions given by the nymph from whom he has just taken leave, Ulysses must keep the Great Bear (“also known as the Wain”) to port, along with a number of other stars hurriedly mentioned in a standard formula, but with little astronomical consistency.\textsuperscript{16} A method, therefore, that ensured he would hold a (very approximate) course to the east. We have no evidence that celestial navigation became much more refined during antiquity, at any rate our sources say little or nothing about it. The ancient source that ascribed a treatise on ‘nautical astronomy’ to the philosopher Thales (VI century) merits the same trust as those who credited him with the theory that the earth was a sphere.\textsuperscript{17} Furthermore, we have every reason to believe that the ancients probably conceived of a nautical astronomy of some kind, which, however, remained largely on paper. A commonplace of ancient poetry, repeated countless times, asserts that the Phoenicians, sailors held in high esteem by the Greeks, oriented themselves by observing the Little Bear, closer to the celestial pole and hence a more precise reference, while the Greeks were content with the Great Bear which, being farther from the pole, marks a ‘north’ which in the course of a night swings widely around the true north.\textsuperscript{18} But neither the Phoenicians nor the Greeks were able to use the more accurate Pole Star, because due to the precession of the equinoxes Alpha Ursae Minoris was not nearly as close to the celestial pole as it is now; indeed it was further away than two other stars in the same constellation, Beta and Gamma.\textsuperscript{19} In short, it seems that the ancients never went very far down this road, even compared to other ‘primitive’ seafaring cultures. In antiquity there is no trace of simple instruments such as the ‘Jacob’s Staff’ used by mediaeval seafarers, and still less of the more refined astrolabe; as for the compass, it is needless to mention that it appeared only in the late Middle Ages.\textsuperscript{20} The famous ‘Antikythera Mechanism’, a battered metal contraption recovered from a shipwreck (1902), whose complexity and precision we can still discern, was at first incautiously hailed as a refined navigation instrument, but today it has been

\textsuperscript{16} Od. 5.271–275.
\textsuperscript{17} This accreditation was already distrusted in antiquity. Diog. Laert. 1.23 attributes the work to Phocus.
\textsuperscript{19} Hipparch., In Arat. 1.4.1, expressly notes that the celestial pole is empty (kenos), criticizing Aratus’ claim that it was marked by an unmoving star.
\textsuperscript{20} Arnaud 1998, 50–59, “Naviguer sans carte ni instrument”.
demonstrated to be a purely scientific device, a portable ‘planetarium’. All of these deficiencies, if we can call them that, lead us to a conclusion which few people now question: Antiquity, for which the geographical map was always much more an instrument of knowledge than a guide for practical use, was totally unacquainted with nautical cartography.

But while nautical charts are lacking, antiquity has bequeathed to us a good number of very characteristic writings, which go under the general heading of peripli (sing. periplus), step by step descriptions of sailing along extended stretches of coast, and even around the entire Black Sea or the entire Mediterranean. Another title, ports (limenes) is also attested; this seems to refer to something substantially similar to the peripli, but it was less successful. It would seem natural to equate this with our mediaeval and modern portolan charts and pilot books, but the comparison is highly doubtful. Although ancient texts frequently offer guidance and suggestions to seafarers, it seems unlikely that they were actually used as handy, practical manuals by captains and helmsmen: what prevails overall is their bookish, narrative character. Indeed texts of this kind are difficult to classify and compare.

2 Sailors and Landlubbers: The Greeks and the Romans

On the irresistible appeal that the sea supposedly exercised over the Greeks and their familiarity with it since the dawn of their national history, and on the very different relationship which is attributed to the Romans, inseparably bound to dry land, much has been written, and indeed, much rhetoric been spouted. Of course certain idées reçues should be examined and reconsidered critically, and this too has been done. In 1947, Albin Lesky’s famous book, Thalassa, announced its thesis in the subtitle, ‘The Greeks’ road to the sea’: far from being “marins de toujours” (De Saint-Denis), the Greeks had emerged from a remote continental past and had gradually become seafarers, in a long

21 See the fundamental study by De Solla Price 1974. The extensive subsequent bibliography has contested some of its conclusions, but no one has since ascribed a nautical use to this instrument.


23 Gernez 1949; Güngerich 1959, general introduction to the peripli literature, with brief review of principal authors; Peretti 1979, 13–83; Dilke 1985, 130–144; Prontera 1992a; Cordano 1992; González Ponce 1993; 1998; Bianchetti 2013c.

24 Lesky 1947.
process that their history and literature still allow us to follow. Other authors too have denied that the Greeks had a profound vocation for seamanship and were really familiar with the marine environment. Indeed, the execration of the sea and seafaring, as a sign of the decay of man from the bliss of the Golden Age, is a commonplace, all along the history of Greek poetry, whose examples fill volumes.\textsuperscript{25} Wilamowitz, in his usual rough manner, echoed an opinion already expressed by someone among his fellow countrymen, contrasting the Greeks with the ‘Nordgermanen’, the far more enterprising and intrepid Vikings. “If the Greeks had been like them,” he wrote with fanciful imagination, “Hercules would not have planted his pillars at the Strait of Gibraltar, but would have defeated Triton in the Caribbean Sea.” Some respect is due to the true navigator-explorers such as Nearchus and Pytheas, but the matter ends there. The Romans remained forever Landratten, and moreover allowed the legacy of the Greeks to wither away.\textsuperscript{26}

But here too there is a good dose of stereotype. It is true that Italy, despite its exceedingly long coastline, is geographically much less ‘maritime’ than Greece, and that in all their early undertakings the Romans appear as a people of shepherds and farmers whom one could hardly expect to be drawn to the sea and sailing; but it is also true that their geopolitical instinct could not have failed to realize that naval power would be crucial in establishing the imperial dominion to which they soon felt destined. When they first went to war with Carthage in 264 BC, they could not have been all that ignorant of seamanship, if only because they already had very close cultural ties with two powerful neighbors—the Etruscans, and the Greeks of southern Italy—who were very advanced in this field. Indisputable evidence of this, more reliable than any historical tradition, is provided by Latin nautical language, which is full of Greek terms whose pronunciation and endings were adapted in ways that demonstrate the old age of their origins. Polybius has handed down the texts of no less than three maritime treaties concluded between Rome and Carthage, regarding both commercial and military matters, before the great conflict broke out. Indeed, the first was originally dated to 508, shortly after the fall of the monarchy. Some modern critics have since revised this date, though to no later than the mid-fourth century.\textsuperscript{27}

\begin{flushleft}
\begin{itemize}
\item \textsuperscript{25} “I say, there is nothing worse than the sea to wreck a man, be he never so strong,” words of Ulysses (\textit{Od.} 8.138–139), and so on…. Roman poetry followed in the wake. Just as a first introduction, Heydenreich 1970.
\item \textsuperscript{26} Wilamowitz 1959\textsuperscript{3}, 1.219.
\item \textsuperscript{27} Polyb. 3.22–25. On the debut of the Roma navy in the Carthaginian wars, De Saint-Denis 1975; on the treaties, Scardigli 1991.
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It remains true, however, that the Romans only appeared on the Mediterranean nautical scene after the Greeks had mastered it for centuries, and that their contribution to the geography of the seas came only much later, when the fleets of the Empire penetrated the northern seas between the Cimbrian Peninsula (Jutland) and Britain, where previously there had been only isolated raids. But their greatest achievement was the pacification of the Mediterranean, the Roman ‘lake’ over which the representatives of Greek geographical science could now roam in safety, gathering information and exploring—and, indeed, they repeatedly expressed their gratitude to the Romans for making this possible.

3 The Sea of Heroes and Myth

The sea and navigation play a central role in the great cycles of myth and epic legend. The Trojan War was an overseas expedition, with its incidents related to sailing—the lack of wind on the outward journey and the vicissitudes of the homeward returns, the nostoi—all taking place at sea.

In the *Odyssey*, as in the *Iliad*, the ancient myth of the *river* Oceanus—the waters that gave rise to all things and encircle the whole world—is well represented, albeit in a way that proves difficult to visualize ‘cartographically’. It is a myth that had to come to terms, so to speak, with all the new knowledge as it was acquired, and whose name came to represent the great expanses of the open sea, as opposed to the closed Mediterranean and Black Sea, in a complicated game that continued throughout antiquity: thus it came about that the name of Ocean remained in use and was preserved until modern geography. And when the *Odyssey* emerged in its final form, the saga of the Argonauts (if we are to believe what the poem itself tells us) was already very popular.

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28 The voyage of discovery of the Greek historian Polybius down the West African coast, as a kind of cultural advisor to his protector Scipio Aemilianus (Plin., *HN* 5.9: *Scipione Aemiliano res in Africa gerente Polybius [...] ab eo accepta classe scrutandi illius orbis gratia circumvectus [...]), doesn’t seem to have achieved memorable results.

29 Strabo, a great eulogist of Rome, notes that the Empire guarantees the safety of the seas (3.2.5); Clarke 2009. Likewise the famous orator Aelius Aristides in the 2nd century AD (*Or.* 48.91).

30 The Homeric places relative to Oceanus are catalogued in Buchholz 1871, 54–57; Lesky 1947, 58–87; Romm 1992.

31 In *Od.* 11.9–22 (Ulysses’ journey to the land of the dead) it is impossible to imagine how the poet conceives of the relation between the sea over which the hero sails and the *river* Oceanus, which he reaches.
Once again, the subject is a sea voyage—or rather, nothing less than the story of the first true sea voyage undertaken by man, containing a cast of the most favorite heroes.32 The legend, which probably was born against a background of nebulous, fabled distant lands, soon had to reckon with the growing corpus of geographical knowledge, as the destination of the voyage was located in Colchis, at the far end of the Black Sea. The variants of the story, especially regarding the part about the return of the heroes, constitute in their own way a veritable chapter in the history of Greek geography, of what was known about the seas and the continents.33

4 The Mediterranean, the Black Sea, the Caspian

The first major advance in Greek geographical knowledge was undoubtedly the realization that the Mediterranean was a closed basin, separate from everything that was ‘outside’. For the civilizations of the Near East, both the Babylonians and the Persians, the Mediterranean was just one sea, along with others—the Persian Gulf, the Caspian and the Black Sea. As a subject of the Persian Empire, Herodotus echoes these concepts in a famous passage where he describes one ‘meridian’ of this geography, a line extending from the Persian Gulf to the Caspian, naming one after another the peoples who live alongside it.34 For the Greeks, though, the center of the map of the world as they perceived it was necessarily the Mediterranean, the inland sea, our sea.35 This went hand in hand with the colonization movement, which saw them swarm from the mother country, all the way to the western Mediterranean and the northern coasts of the Black Sea.36 From the Odyssey it is evident that at the time the Homeric poems were set down in their definitive form (8th–7th century BC), the Greeks had already regained and even surpassed the knowledge of the Mediterranean ‘far west’ that had been acquired by Mycenaean seafarers and then partly lost during the so-called ‘Dark Ages’ between the decline of that

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32 Od. 12.69–70; Meuli 1921.
33 Delage 1930; Gómez-Espelosín 2000, 41–53.
34 Hdt. 4.37.
35 Burr 1932, on the gradual extension of Greek knowledge through the history of sea names; Ronconi 1932; Dilke 1981; Prontera 1996a; 2007–2008b; 2011b, 185: “The inland sea continuously exerts its centripetal function in ancient world maps, not only in the early circular ges periodoi, but also in the new cartography pioneered by Eratosthenes.” It is worthwhile to remember that the expression “mare nostrum” was always employed by the Romans in a purely geographical sense, see De Saint-Denis 1975, 62–63.
36 Labaree 1957; Manoledakis 2008.
civilization and the beginning of the Greek Archaic Age: indeed, by then Greek colonies were already springing up in Sicily and Italy. It seems the poet wishes to shroud in obscurity all that lies west of Ulysses’ homeland, the Ionian Islands, so as to be able to populate those ‘unknown’ regions with the fabulous or monstrous wonders of a bygone tradition. But he gives himself away when he lets slip that he knows Sicily not just as the home of Polyphemus but also as the homeland of one of Laertes’ maidservants.

Little later, Hesiod likewise locates in the west one of the most fabulous characters in the Odyssey, the witch-goddess Circe, but then he betrays his knowledge of the Tyrrhenian by giving the name Latinos to a son Ulysses reportedly had by her, and mentions the Tyrsenoi (i.e. the Tyrrhenians, Etruscans) as a famous people.

During this same period, that of the Homeric poems, according to tradition, the Greeks established permanent colonies in what was to become Magna Graecia. Both ancient sources and modern archaeology agree in dating the foundations of Naxos and Syracuse in Sicily, and that of Sybaris on the Italian mainland, to the second half of the 8th century BC. And likewise from the eighth century date some important archaeological finds from Pythekoussai, modern Ischia, hence squarely in the Tyrrhenian. An important role in the expansion westwards is attributed to the Euboeans of Eretria, who around the same time, in 733, occupied Corcyra (Corfu), to be supplanted later by the Corinthians. The gateway to the Adriatic was thus opened to the Greeks, who then successfully advanced up this new sea to its northern end, where they settled in Spina, turning it into a city marked by their presence and culture.

Having come to recognize the Mediterranean as an enclosed space, the Greeks soon realized that it had openings at its opposite extremes: the straits that led to the Black Sea through the ‘antechair’ of the Propontis (the Sea of Marmara), and what we now call the Strait of Gibraltar, the legendary Pillars of Hercules. They soon succeeded in passing through both channels, the

38 Od. 24.211; 389. In 20.383 Sicily is mentioned as a country with which there are normal trade relations.
39 Her name became lastingly associated with the promontory in Latium still known as ‘Circeo’.
40 Hes., Theog. 1011–1016. Doubts about the authenticity of the lines are expressed by West 1966, 398.
41 Braccesi 2003, 44–46.
former very early on; and even the latter was never really considered impassable, despite what is so often popularly believed, although in this case matters were more complicated.43

Already in the 8th century the Greeks must have started to visit the Black Sea, which gradually became studded with Greek colonies on both its southern and northern shores.44 In this expansion, as in the colonization of the Propontis, an important role was played by the Milesians, representatives of the important and extremely dynamic Greek presence already firmly established on the Aegean coast of Anatolia. It is no coincidence that the name of Miletus is of such central importance whenever the beginnings of Greek philosophy and science are referred to, especially regarding cosmology and geography. The colonies along the Scythian coast of the northern Black Sea represented for the Greeks the access to a world which greatly stimulated their geographic and ethnographic thinking (Herodotus and the pseudo-Hippocratic De aere, aquis, locis), as well as their reflections on geological issues, regarding the Black Sea itself, the Sea of Azov to which it was linked, and the physical relation between these seas and the Mediterranean. The subject is amply discussed by Aristotle in his Meteorologica, in the course of a long exposition of his views about the sea and its nature in general.45

With the foundation of Greek colonies on the strait which links it to the Black Sea, the Sea of Azov soon became known specifically as Limne Maiotis, which the Latins rendered as Palus Maeotis. Its shallowness was known, but its size was greatly exaggerated—an error which persisted throughout antiquity.46

Another serious misconception, which was widespread for a long time, concerned the Caspian Sea. After Herodotus and Aristotle had rightly recognized its exceptional nature as a closed basin,47 the expedition of Alexander and an exploration carried out by Patrocles spread the belief that it was a gulf of the northern Ocean. In the Geography of Ptolemy it is again a landlocked sea.48

The ancients’ interest in a sea that was relatively close and accessible, but at the same time exotic, never waned. At the height of the Roman imperial period (2nd century AD), Arrian of Nicomedia wrote his Periplus of the Euxine Sea, when he was appointed as a state official in that region.

43 Carpenter 1966; Amiotti 1987.
44 Olshausen 1991, 171–177, with further references.
45 Arist., Mete. 2.1.354a.
46 Hdt. 4.123,3; Strab. 2.5.23; 7.4.5; Plin., HN 4.78; Polyb. 4.39; 40; Thomson 1948, 87, 103.
47 Hdt. 1.202.4; Arist., Mete. 2.1.354a.
48 Arr., Anab. 5.26; Plin., HN 1.173; Ptol., Geog. 7.5.4; Neumann 1884.
5 The Pillars of Hercules, and Beyond

Just like the entrance to the Straits between the Mediterranean and the Black Sea, where ancient myth placed the Symplegades as an archetypal obstacle barring the route of the Argonauts, so also the crucial passage marked by the Strait of Gibraltar—the Pillars of Hercules—over the centuries came to be surrounded by a series of legends and myths, albeit to a far greater extent. In its vicinity the Greek imagination located the mythical island of Erytheia, whose name recalls the red of the sunset, and the fabulously rich king Arganthonios of Tartessus, the city whose name resembles that of the mysteriously located biblical Tarshish, and a kind of Eldorado of the ancients.49

Even before the rise of Carthage, the western Mediterranean was the theatre of Phoenician expansion and colonization, and the ‘Pillars’, the gateway to the Atlantic, were named after the Phoenician hero Melqart: it was only interpretatio graeca that associated them with the Theban hero Heracles or Hercules. This Phoenician expansion at the westernmost limit of the Mediterranean became a true thalassocracy under Carthage, when it firmly established its supremacy on both sides of the strait and on the two continents, Africa and Iberia, exercising a jealous monopoly over voyages of discovery that could open up new trade routes. The myth of the ‘insuperable’ Pillars of Hercules, a literary topos which, as we know, was to enjoy lasting success, probably has its source in this western blockade.50 The Carthaginians were credited with exploring the outer Ocean, southwards along the west coast of Africa, northwards as far as the Cassiterides, the ‘Tin Islands’—perhaps identifiable with the Isles of Scilly—and to some island or archipelago out in the Atlantic—the Canary Islands, the Azores or Madeira.51 A pseudo-Aristotelian work contains the famous report of a wonderful island discovered by Punic sailors in the ocean, and preserved as a jealously guarded secret, as they generally did with other profitable trade routes.52 The actual existence and identity

49 On the Phocaeans and their pioneering navigations to the Adriatic and Tyrrhenian Seas, to Iberia and Tartessus, Hdt. 1.163 (“they were the first among the Greeks”); Strabo 3.2.11. The rivalry with the Carthaginians (and the Etruscans) in the West Mediterranean led to the battle of Alalia (about 540 BC), which put an end to the Phocaean thalassocracy, Hdt. 1.166. On the complex of myths about the Pillars of Hercules, Antonelli 1997; Braccesi 2003, 164–178; Rouillard 2009.

50 See for example: Pind., Nem. 4.69, Ol. 3.44. On Phoenician expansion westward, Pillars of Melqart, etc., see Bernardini 2009, containing numerous references.


of this wondrous island has naturally remained the object of endless speculation. The issue is complicated by the overlap between authentic historical reports and widespread legendary traditions common to the various peoples of Europe, of happy islands or Islands of the Blessed located far to the west.\(^5\)

The names of ancient Carthaginian navigators remained for ever linked to the daring Atlantic routes: Himilco, who explored the coasts of Europe, perhaps reaching the British Isles, and Hanno, who sailed far down the African coast, though exactly how far is unclear. Indeed this question is the subject of a vast body of literature, based on the few surviving pages, in Greek translation, of the so-called *Periplus of Hanno*, supposedly the account of his adventurous voyage of exploration and colonization. The dates of both are uncertain: Pliny says only that the expedition of Hanno took place when Carthage was at the height of its power, which in itself seems plausible, hence perhaps sometime between the sixth and fifth centuries BC.\(^5\) As aforesaid, how far Hanno got is highly debated: the most passionate claim that he reached the Gulf of Guinea and Cameroon, but others are more skeptical, and even go so far as to deny the historical authenticity of this figure and his achievement.\(^5\)

Even for the Greeks, the Pillars did not represent an impassable limit.\(^5\) An isolated report by Herodotus tells of Colaeus of Samos, a navigator said to have been driven out into the Ocean through the Pillars of Hercules by a gale in about 660 BC (again, the *topos* of the seafarer who discovers new lands by accident)—eventually ending up in the Phoenician port of Gades (Cadi) and the fabled Tartessus, whose connection with Gades itself is somewhat difficult to establish.\(^5\)

Later, the Phoceans of Marseilles had their own pair of daring navigators who explored the Atlantic coast, to north and south: to northern Europe sailed the renowned Pytheas (at the time of Alexander the Great), while the earlier but less celebrated Euthymenes (6th cent.) went south to Africa, perhaps

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\(^{54}\) Plin., *HN* 2.67; on Himilco, Avien., *Omar.* 116, 407, 368.


\(^{56}\) Fabre 1992.

\(^{57}\) Hdt. 4.152; on Colaeus, Braccesi 2003, 164–168.
to Senegal. In the history of ancient geography, Pytheas is probably the figure for whom there exists the most extensive bibliography, albeit partly amateurish and uncritical, to be used with due caution. He is relatively rarely mentioned by ancient sources, however, considering the importance of his discoveries, as far as we can ascertain. Some authors were so skeptical and heaped such discredit on him that it has sometimes been considered a true case of ‘censorship’. From the limited but relatively significant collection of fragments of his text (referred to as On the Ocean), his case emerges as unique during antiquity: a traveller well versed in the sciences, who boldly faces the unknown to verify and extend the bounds of this knowledge through observation. Pytheas himself is represented as a man intent on defining the relationship between earth and celestial bodies, elevation of the sun and length of the day—thus laying the foundations of scientific geography. And this truth cannot be overlooked, even though the tradition includes reports of his encounters in the far north which smack of fable and which recur so often in sailors’ yarns, even those dating to more recent times.

As for the lands and seas which he is supposed to have reached, there are any number of theories to choose from. There is broad agreement that he reached the British Isles, but differences begin to emerge as soon as discussion turns to the range of his voyage along the coast, whether he circumnavigated the Isles and, if so, in which direction—clockwise or anticlockwise—and whether he should be credited with discovering Ireland and the archipelagoes to the north of Scotland. But all this pales before the myth which Pytheas has bequeathed to our culture: the mysterious Thule, much dwelt upon in ancient literature (Virgil, Seneca, Tacitus . . .) and referred to countless times by modern writers in the most wide-ranging contexts, from esotericism to political extremism. Its precise whereabouts (assuming there is any sense in asking for them) are also unclear, possible options being the Shetland Isles, the Norwegian fjords and Iceland. There are even those who claim that Pytheas sailed as far as the Baltic Sea. What is clear, though, is that he is a figure of the utmost interest, despite the unlucky attentions of his more reckless champions: perhaps the only ancient explorer in the modern sense of the word, an example of skill

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60 Chevallier 1984; Aujac 1988; De Anna 1998.
and fortitude committed to the advancement of knowledge.61 Today his statue, together with that of Euthymenes, adorns the façade of the Marseilles stock exchange, a kind of honor elsewhere accorded only to figures of the caliber of Christopher Columbus or Vasco da Gama.

Pytheas’s legacy fathered the rich literary vein dealing with the marvels and mysteries of the poles, which runs from antiquity, with Antonius Diogene’s fanciful romance, *The Incredible Wonders beyond Thule*, through to writers like E.A. Poe (*Gordon Pym*) and Jules Verne (*La Sphinx des glaces*).

In the end, it was the unnavigated western ocean which repeatedly suggested to Greek geographers (well aware of the roundness of the earth) the most audacious and modern idea of all: what, at the time of Columbus, would be called ‘buscar el Levante por el Poniente’, reaching the Far East and India by travelling westward from Iberia. “The distance is minimal,” Seneca reckoned—a mistake which Columbus was to inherit and which spurred him to undertake the task.62

6 In the Wake of Pytheas: Romans in the Northern Seas

In the age of Herodotus, nobody knew whether Europe was also surrounded by sea towards the north.63 But now Augustus was able to boast in his *Res gestae* that Roman power had reached the northern seas: “My fleet sailed the ocean from the mouth of the Rhine eastwards, as far as the land of the Cimbri, never before reached by any Roman, either by sea or by land”.64 This is a general reference to *fines Cimbrorum*, but we know from other sources that the specific location is the *promunturium* of the Cimbri, or Jutland, the Danish peninsula. Pliny the Elder offers confirmation of this and is even more optimistic: “Starting from Gades [Cadiz] and the Pillars of Hercules, the entire western ocean is navigable along the coasts of Spain and Gaul.65 The northern ocean has been extensively navigated. Under the auspices of the divine Augustus, the fleet circumnavigated Germania as far as the Cimbrian peninsula; beyond there were sightings and oral reports of a boundless sea, stretching as far as Scythia and

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61 Broche 1935; Dion 1966a; 1966b; Hawkes 1985; Cunliffe 2001; Magnani 2002.
63 Hdt. 4.45.1.
64 *RG* 26.
65 Seneca was equally confident: *Nunc vero tota exteri maris ora mercatorum navibus stringitur* (*QNat.* 44.24).
The Sea of the Greeks and Romans

The British Isles, which had already witnessed attacks by Caesar’s fleet (built on site, i.e. on the coast of Gaul, and with features appropriate to the local conditions), did not mark the northernmost reach of Roman navigation. Tacitus recounts in his booklet in praise of his father-in-law, Agricola, a gifted military governor in Britannia: “For the first time, the Roman fleet circumnavigated the coast of this furthermost sea and confirmed that Britannia is an island. At the same time, it discovered and subdued the islands known as the Orcades. Thule was also sighted. Those were the orders, and winter was approaching”. Tacitus implies, it was necessary to withdraw before putting to shore.) This time, in all probability, Thule was one of the Shetland Islands. Thule could be located more or less where one liked, according to the vicissitudes of life and the promptings of one’s imagination. Clearly, Tacitus invokes it to the glory of his father-in-law.

The Classis Germanica, probably formed by Augustus with a view to controlling the Rhine and the Danube, the major rivers on the German side of the empire, also took part in joint operations with land forces from the North Sea coast to the mouths of the Elbe and Ems. These operations were part of plans to conquer Germania Magna, which were abandoned following the defeat of Varus in 9 AD. But as late as the year 15 AD, a huge Roman fleet under the command of Tiberius’s adopted son, Germanicus, transported enormous numbers of troops from the Insula Batavorum (now Holland) to the mouth of the Ems, in a combined operation with land forces. This time it was a violent storm (graphically rendered by Tacitus as apocalyptic) which struck the Roman fleet, wreaking death and destruction, and certainly contributing to frustrate plans which were too ambitious. From now on, Roman land and sea forces would keep to the west of the mouth of the Rhine.

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66 Plin., HN 2.67. The intelligence relating to the northern coast of Europe is doubtful and occasionally contradictory, varying according to the freshness of the information gathered. Strabo once says that the coast beyond the Elbe is unknown (7.2.4: pantapasi agnosta), while Pomponius Mela (3:33) mentions the Vistula. But there was some notice of a fabled ‘isle’ Scandinavia, or rather of a number of islands: Plin., HN 4.96 (Scatinavia, incompertae magnitudinis, only a part whereof is inhabited, so far as is known); Mela 3.44 (Scadinavia); Ptol., Geog. 8.6.4 (Skandia), cf. 2.11.33–34 (the “so called” three minor Skandiai).

67 Tac., Agr. 10.5–6.

68 Wolfson 2008; Seebold 2009.

69 Tac., Ann. 2.9–24.

70 Strab. 7.2.4: “The Romans have not yet advanced into the parts that are beyond the Albis”; Chevallier 1984.
The Asian Seas

Early on, when they became subjects of the Persian Empire following the conquests of Cyrus the Great, around the middle of the sixth century, the Greeks of Asia played a part in the discovery of the East. Under the order of Darius I, the famous sea-captain Scylax of Caryanda carried out an ambitious voyage of exploration to pave the way for the Persian conquest of western India. Between 519 and 513 BC, Scylax is thought to have sailed down the Cophen (now the Kabul River), then the Indus, and to have returned to Egypt along the coast of the Indian Ocean. Herodotus places this feat in the context of his world geography, his piece by piece construction of the oikoumene. Scylax’s voyage of discovery is seen as opening up a whole swathe of the ocean to Persian shipping, thus helping to demonstrate the insularity of the oikoumene, a fact very probably already established in the African sector, according to Herodotus (see infra). The theory was of Ionian origin, from the homeland of that same Thales who maintained that the world was created from water and who gave a primitive scientific form to the very early myth of the river Ocean surrounding the earth.

Two centuries later, there was a sequel to Scylax’s explorations when Alexander rounded off his conquest of India by building a fleet which sailed down the Indus and by entrusting his admiral, Nearchus, with the task of exploring the coasts of the Indian Ocean afresh, a journey which ended this time in the Persian Gulf after a voyage fraught with difficulty. There is an account of it in the short treatise on India (Indike) by Arrian of Nicomedia (95–180 AD), the second part of which is given over to an ample summary of the report left by Nearchus in his log-book, one of the most remarkable works in all Greek literature, even in the abbreviated form in which it has come down to us.

In keeping with the theories of Greek science learnt from his master, Aristotle, Alexander might well have expected to find the Ocean to the east, i.e.

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71 Someone later linked the prestigious name of Scylax to the authorship of one of the most textually corrupt and controversial works in all ancient literature: a circumnavigation of all the coasts of the Mediterranean and the Black Sea, with a little foray into the ocean for good measure. The extent to which the work may be considered authentic and original, and speculation as to which additions were made, when and by whom, to give it its present form are matters which have generated a debate of such vastness and subtlety as to be disheartening. See Peretti 1979.
72 Hdt. 4.44.
on the far side of the world which he hoped to reach in his dream of universal conquest; in fact, he found it to the south. This was in line with the concept of the *oikoumene*-island, which in turn involved the idea of circumnavigation on a grand scale, or sailing round entire continents—something of an obsession for ancient geographers. There had always been traditions recounting doubtful or fabulous voyages around Africa or from India to Germania, undertaken deliberately or accomplished accidentally.74

We do not know to what degree the ancients came to realize that they had underestimated the extent of the land to the east. Herodotus believed that India (i.e. Persian India, more or less present-day Pakistan) was the furthermost land, very close to where the sun rises, on an earth still thought of as flat.75 In Hellenistic and, above all, Roman times, something new was opened up: a channel for regular relations with India, mainly by sea. Tradition has handed down the name of an unusual character whom our source depicts as more of a trader than a true navigator, adding one or two curious, somewhat implausible details: he is the Greek Eudoxus of Cyzicus, “the would-be Vasco da Gama of the Ancient World”, who is credited with taking the route to India by sailing around Africa, no fewer than four times towards the end of the second century BC. Twice, he is believed to have left from Alexandria, with the backing of the Ptolemies, who then ruled Egypt; on the other two occasions, from points further west, Pozzuoli and Iberia. What was achieved by such enterprise remained uncertain.76

More credible, albeit much debated, is the story of the navigator Hippalus, who is believed to have discovered at about the same time that the monsoon winds are regular, thus making it possible to sail across the Indian Ocean from the Red Sea in relative safety.77 Trading in the area was not new, but the

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74 Cf. the account of the Indians who ran into storms and ended up being carried way out of their home waters and into the German Sea at the time of Metellus Celer. The story, traceable to a lost work of Cornelius Nepos, was subsequently reported by Mela. 3.45. Plin., *HN* 2.170, Mart. Cap. 6.621; Biffi 2003.

75 Hdt. 3.38.1–2.

76 Thiel 1939; Amiotti 2004. Not by chance, the adventures of Eudoxus have inspired a historical novel: *The Golden Wind*, by L. Sprague de Camp.

77 *Peripl. M. Rubr.* 57: Captain Hippalus, discoverer of the India route; Ptol., *Geog.* 4.7.41: the sea opposite Ethiopia, between the Red Sea and the Indian Ocean, is called ‘The Hippalus Sea’; according to Plin., *HN* 6.172 ‘Hippalus’ was the name given by some authors to a promontory in the Red Sea. On the complex question of the relation between Hippalus and Eudoxus of Cyzicus, whom some have claimed were contemporaries, see Otto and Bengtson 1938; Rostovtzeff 1953, 2.926–929; Mazzarino 1982/1987: Hippalus never existed as a real figure; the name derives from a textual misinterpretation Casson 1989, 224.
realization that the monsoon winds could be exploited made voyages to India almost a matter of routine: you left in summer with the south-west monsoon from Egyptian ports on the Red Sea; you reached the western coasts of India and returned the following winter with the north-east monsoon. Once Egypt was annexed to the Roman Empire, there were no longer any barriers to trade between the Mediterranean, the Red Sea, East Africa and the Indian Ocean. It may be no exaggeration to say that, after the interval of the Middle Ages, it was only at the dawn of the modern age that Europe was once again in a position to make use of this possibility, and then on the much longer and more hazardous route via the Cape of Good Hope. The ease of communication supposedly achieved by Hippalus was only surpassed with the opening of the Suez Canal.\textsuperscript{78}

Strabo tells us that before the Romans reorganized Egypt, it was seen as quite unusual if twenty or so ships a year ventured to cross the Red Sea as far as the strait; now great fleets made it to India and returned to Egypt with precious wares which were then exported to many different countries; he himself had seen a hundred and twenty ships set sail for India.\textsuperscript{79} The many Roman coins discovered on Indian soil speak loud and clear, and the moralistic strain in Roman philosophy found a spokesman in Pliny who deplored his fellow-citizens’ lavish spending on eastern luxuries, to the serious detriment of the empire’s finances.\textsuperscript{80} When Horace depicted the Roman merchant “running” to do business in India, he was not indulging in poetic license.\textsuperscript{81}

Discussion has already focused on how large a part Mediterranean sailors—Greeks and Romans—played in these voyages. It may well be that the westerners were merely the traders travelling on ships sailed by crews from other nations, perhaps Arabs. The so-called \textit{Periplus Maris Rubri}, a description in Greek of the Indian Ocean, is much more concerned with trade than with geographical or seafaring matters. Because of its eminently practical nature, this document occupies a very special place among the works entitled \textit{peripli} (see \textit{supra}).\textsuperscript{82}


\textsuperscript{79} Strab. 2.5.12; 17.1.13.

\textsuperscript{80} Plin., \textit{HN} 16.41; see also 6.26 and 12.41.

\textsuperscript{81} Hor., \textit{Epist.} 1.1.45.

\textsuperscript{82} Frisk 1927; Casson 1984; 1989; González Ponce 1992; Belfiore 2004; Boussac 2012. “If Strabo and Tacitus had had their eyes open to this sort of things as this man of action had, we would know more about Antiquity,” Mommsen 1885, 613, n. 1.
On the question of what lay beyond Sri Lanka (well known by the name of Taprobane, but much overestimated in terms of its size) and the Ganges, the ancients were confident that they knew something, but they may have been rather optimistic. Strabo alludes, as a matter of common knowledge, to the navigators who sailed as far as the Ganges, but immediately adds that they were few (spanioi). In the second century AD, Ptolemy is confident enough to map out the regions and seas situated towards the east: Chryse the golden and Argyra the silvery, and beyond these the Great Gulf (Megas Kolpos). The Periplus Maris Rubri is the other main source of the ancient navigators for the far east, but everything is doubtful and debatable, impossible to locate with any confidence on our maps. The likelihood is that western geographers gained access to all this information at second or third hand, and that it was conveyed haphazardly through Indian sailors and traders familiar with those seas. To take just one example, some identify Chryse with the Malayan peninsula while for others it is Sumatra. The fabulous Cattigara, “the port of the Sinai,” for which Ptolemy gives the co-ordinates with his usual illusory precision, has been identified with every possible port city between Singapore, Manila and Canton.

8 The African Seas

Voyages around Africa are one of the most doubtful and debated areas in the history of early exploration. The attempts by the Greek Euthymenes and the Carthaginian Hanno, have already been discussed, but nobody ever credited them with a complete circumnavigation of the continent. On the other hand, Herodotus has the famous story of the Phoenician mariners who are supposed to have successfully completed the journey on the orders of the Pharaoh Necho (end of seventh century), in a manner at once adventurous and exotic, making a number of halts and feeding themselves with agricultural products sown and harvested en route. But it is a very dubious tradition, and everything that we know about the difficulties which the circumnavigation of Africa posed to pre-modern nautical science inclines us to reject it. There is

83 Strab. 15.1.4. It is true, though, that the geographical horizon of the Peripl. M. Rubr. reaches as far as the eastern coast of the Gulf of Bengal; see Dihle 1974, 574 (= Dihle 1984, 109–117). On western founds in Indochina, Coedès 1947.
84 For a clear, level-headed account, Thomson 1948, 313–319.
85 Ptol., Geog. 1.14; 7.3.3.
86 Hdt. 4.42.
ample documentary evidence for the long-continued efforts of the Portuguese, before being rewarded with the successes of Bartolomeu Diaz and Vasco da Gama. The detail which ought to confirm the achievement, i.e. “the sun to the right”, which the Phoenicians are supposed to have observed during their voyage, is very probably merely evidence of the practice common to many ancient mariners—or to those who record their tales—of passing off as actual experience the inferences stemming from the cosmological theories they espoused. In other words, the theoretical edifice precedes the lived experience, rather than resting upon it, and the theoretical a priori is offered up as the fruit of observation.\textsuperscript{87} And it is important to remember that the southwards extension of Africa was greatly underestimated in ancient times. If the ancients had had a clearer idea of how far the continent stretched southwards, they would have thought twice before crediting certain over-optimistic traditions. Herodotus juxtaposes one circumnavigation which had been passed down as a success with another which had failed: the noble Persian Sataspes was condemned to be an explorer, but encountered such insuperable difficulties along the route that he was forced to turn back and face execution.\textsuperscript{88}

Centuries later, the circumnavigation of Africa was thought to have been repeatedly attempted, following the India route, by the already mentioned Eudoxus of Cyzicus (see supra). The wonderful story of Eudoxus underwent a number of embellishments which smack of fanciful corroboration of geographical theories which someone was very fond of, such as the chance discovery of the usual wreckage, evidence of early voyages: this time a figurehead in the shape of a horse’s head, which had to prove that fishermen from Cadiz had reached the coasts of Ethiopia. Something, i.e., like the Roman coins recovered in Guinea or, even worse, the Phoenician inscription in Brazil.\textsuperscript{89} Nevertheless, the Stoic philosopher and influential scientist Posidonius of Apamea (135–50 BC), whose greatest contribution to science was his complete theory of the tides in connection with the moon and the sun,\textsuperscript{90} accepted and valued

\textsuperscript{87} Janni 1978.
\textsuperscript{88} Phoenicians and Sataspes: Hdt. 4.42–43. We shall not even attempt to provide a bibliography on the question of African circumnavigation (those familiar with it will understand) and simply refer readers to the fundamental work of Desanges 1978, 39–85, to Janni 1978; 1996, 456–459: 2008, to the well-informed Zimmermann 1999, 98–112, and to Corcella, Medaglia, and Fraschetti 1993, 265–267. On Eudoxus, Thiel 1939 and most recently Amiotti 2004, with the previous essential bibliography. On Necho, Sataspes, Hanno, Nicolai 2005 who is inclined to accept the tradition.
\textsuperscript{89} On these and similar matters, Acquaro 1985.
\textsuperscript{90} Not entirely original, but we owe him for his detailed work on the evidence. See Edelstein, and Kidd 1989–1999; 1981, 774–776.
the story as one more proof of the insularity of the oikoumene, surrounded on every side by the Ocean, a theory he firmly supported.91

Still shrouded in uncertainty, but more plausible, is the information about the African coastline to the south of Cape Guardafui, the tip of the Horn of Africa. Ptolemy, who quotes his predecessor Marinus of Tyre, and the Periplus Maris Rubri, know a fair number of names for the coastal regions of East Africa: Aromatophoros, ‘Coast of Aromas’, to be identified maybe with the coast of Somalia; the other coast called Azania, lying beyond it; the major port city of Rhapta (possibly situated near the present-day Dar es Salaam), and some other names. That this information stems from first-hand experience, or at least from reliable sources, seems borne out by the belief that inland of this coast—the African coastline giving onto the Indian Ocean—lay the ‘swamps’ which were the source of the Nile.92

These are all details which smack of personal experience, even in their very lack of precision. And it is extraordinary that our source of information for those regions furthest from the Mediterranean, of which the earliest travellers had some knowledge, should be a text so unscientific as the Periplus Maris Rubri, a nautical and commercial handbook intended for traders along the northern and western coasts of the Indian Ocean.

It was precisely the Indian Ocean which saw the most erroneous treatment in ancient geography, and in the very work which long enjoyed the greatest authority: Ptolemy’s Geography. Here the Indian Ocean becomes an enormous closed basin, an expanse of sea bordered by Asia, Africa and a hypothetical huge southern land which links them, from the extreme south to the extreme east. Ancient geography had started out with the mythical conception of the oikoumene surrounded by the Ocean—of the land in the womb, as it were, of the great cosmic waters—and this conception had even been developed in an odd variation, with little or no relation to any geographical fact, by the Stoic philosopher Crates of Mallo, who visited Rome in 169–168 BC: four symmetrical oikoumene on a huge globe, separated by two ring-shaped bands of Ocean, one which covered the whole torrid, equatorial zone, and another crosswise.93

Now, the prominent geographer of his time thus arrived at the opposite conception of the sea encircled by land. It is a reminder of the significance of the

91 Posidonius F 49 EK = F 13 Theiler = Strab. 2.3.5, who blames him for believing such a tall tale. See also Plin., HN 2.169. On Posidonius and the Ocean, Villani 2009.
92 Ptol., Geog. 1.9.1. From a nautical point of view, a competent analysis of the voyages along the African coastline, and of those bound for India, can be found in Casson 1989, 283–291.
93 Thomson 1948, 202–203; Mette 1936 (with the fragments of Crates); Broggiato 2001, on Crates’ geography, li–lv.
role that schemes and preconceptions have always played in the course of ancient geography. The seas of which those geographers had direct and proven knowledge account for a very small proportion of the overall surface of the waters covering the globe.\textsuperscript{94} The real turning-point would only come with the age of the great discoveries, when voyages of exploration profited from a very different level of commitment and organization.

\textsuperscript{94} Not more than three percent, according to Warnecke 2002, 83.
CHAPTER 3

The Concept of “Magna Graecia” and the Pythagoreans

Gianfranco Maddoli

The most widespread image of the Hellenic presence in the West, in the common opinion, but also in that of many scholars, is immediately associated with the expression Μεγάλη Ἑλλάς—Magna Graecia—Great(er) Greece, whose origin and relevance is not always adequately known: this is proven by a long list of proposals that range from antiquity to the current debates, especially lively in Italian historiography.1 Even those who limit it, quite rightly, only to the south of Italy lack the perception of its true meaning and at the same time of the territorial and temporal limits within which the denomination was born and remained alive, ingraining in the memory of later generations the mark of a civilization and of such power as to be transmitted successfully up to our time.

First the Greek frequentation then the colonization of the western Mediterranean embraces at least a millennium of history, between the contacts of the Mycenaean kingdoms with the emporia overseas and the Roman occupation of the territories where the poleis were founded starting from the VIII century. Therefore the central questions are: when was the name “Magna Graecia” born and for how long was it vital? In what area of interest must we explore to find its origins and what meaning did such a denomination have?

Before giving an answer we must examine the main testimonies that attest it.2 The first thing to observe in this regard is the following: in some sources the name is explicitly referred to an era in Western Greek history between the end of the VI and the beginning of the V century; but all the sources regarding that


2 All the sources can be found in Ameruoso 1996, who analyzes them individually, while specific considerations on some of the most important ones were presented more recently by Maddoli, Mele, Musti (see n. 1).
era are relatively late: in effect they begin with the IV–III century BC to then continue during the Roman age and beyond. The most antique one, preserved by a scholion in Plato’s Phaedrus (209c), probably dates back to the historian Timaeus,\textsuperscript{3} cited in a comment to a proverb (κοινὰ τὰ τῶν φίλων) that was said to have been used περὶ τὴν Μεγάλην Ἑλλάδα at the time when Pythagoras was convincing the inhabitants of that region, κατὰ τὴν Ἰταλίαν, to pool all goods. The assignation of the expression to Timaeus is explicitly reiterated by Photius (\textit{Lex. s.v. κοινὰ τὰ φίλων}). The connection with Pythagoras’ school is also found in the second most antique testimony of the name, dating back to Polybius (2.39.1) that mentions the fire of the Pythagorean synedrion that happened κατὰ τὴν Ἰταλίαν, κατὰ τὴν Μεγάλην Ἑλλάδα τότε προσαγορευομένην: the chronological collocation is the middle of the V century, as specified τότε (then).

Cicero links in different occasions the name to Pythagoras qui . . . tenuit Magnam illam Graeciam cum honore disciplinae tum etiam auctoritate (\textit{Tusc. 1.16.38}) and cites again the concept of the auctoritas of the ancients, more specifically of those qui in hac terra fuerunt Magnamque Graeciam, quae nunc quidem deleta est tum floreat, institutis et praefectis suis erudierunt (Lael. 4.13; \textit{Tusc. 5.4.10}; cf. \textit{Arch. 10}); and again, in another clear passage of the Tusculanae, he links the name “Magna Graecia” to the blossoming of the Italiote poleis: firstly Croton, the city of Pythagoras, and then those of the other Pythagoreans (\textit{Tusc. 4.1.2}). And so also in the \textit{de oratore} (2.37.154; 3.34.139) he talks of a vetus Italy in which Pythagoras lived and which was populated by Pythagoreans \textit{cum erat in hac gente Magna illa Graecia}, a Greece quae quondam Magna vocitata est: there is a clear awareness of a distant reality, that has been destroyed and is no more, underlined by adverbs that directly recall the τότε of the passage of Polybius (\textit{cum erat . . . , quae quondam . . . ,} and before, in Lael. 4.13, the \textit{tum}). There is therefore full knowledge that \textit{Magna Graecia} was an experience of the past, ended centuries ago, whose excellence is alive in the collective memory.

The connection of Μεγάλη Ἑλλάς with Pythagoras and his school appears again in the residual testimonies of two, or rather three, authors who, together with others whose works have been lost, gave rise to a wide reflection (recently re-defined also as “refounding”) on Pythagoreanism in the field of the Neoplatonic thought: Nicomachus of Gerasa, cited by Porphyrius, and Iamblichus, the pupil of the latter; the reference to \textit{Magna Graecia} is found in the \textit{Pythagorean Way of Life} written by these last two authors in a line of uninterrupted tradition on the thought, the life and the school of the great philosopher from Samos. Nicomachus (\textit{Porph., Vita Pyth. 20}) tells us that Pythagoras became a point of reference for a very ample audience and his

\textsuperscript{3} FGrHist 566 F 13.
The Concept of “Magna Graecia" and the Pythagoreans

61 teachings were at the basis of the poleis of Magna Graecia (...πολίσαν τὴν πρὸς πάντων ἐπικληθείσαν Μεγάλην Ἑλλάδα ἐν Ἰταλίᾳ...). Iamblichus mentions Megale Hellas twice: in Vita Pyth. 30 he repeats the expression of Nicomachus/Porphyrius (...καὶ πολίσαντες τὴν πρὸς πάντων ἐπικληθείσαν Μεγάλην Ἑλλάδα...) whereas in VP 166 he explicitly poses in a cause-effect relationship that which in the other testimonies is only a logical juxtaposition, affirming that, after Italy “became filled” with philosophers, from a place substantially ignored διὰ Πυθαγόραν Μεγάλην Ἑλλάδα κληθῆναι. A possible indirect echo of Croton’s Pythagoreans can be found in the late geographical vocabulary of Stephanus of Byzantium, who under the entry Τέρινα affirms, citing Phlegon, that the polis of the western side of Calabria was founded by Croton and that it, according to Apollonides of Nikaia, was linked to the name Μεγάλη Ἑλλάς.

A link with the flowering of the Italian poleis, but with no reference to the Pythagoreanism, was already (end of II cent. BC) in the Ps. Scymn. 300–304: the Ἱταλία, once headquarter of a miscellanea of barbarians, μεγάλη δ’ ὑστέρον πρὸς ἑσπέραν Ἑλλάς προσαγορευθείσα ταῖς ἀποικίαις. The denomination “Magna Graecia” appears again in the Sophists at Dinner of Athenaeus of Naucratis (12.523e—II–III cent. AD), that starting from Siris broadens his views to all the Greek settlements that rose in this area for wealth and number of citizens, and concludes: διὸ καὶ Μεγάλη Ἑλλάς ἐκλήθη πᾶσα σχεδὸν ἡ κατοίκησις; this text has been used improperly to bring back the origin of the denomination to a period (VII cent. BC) prior to the destruction of Siris.

Among the Latin sources, Pliny first (HN 3.42) and Servius later (ad Aen. 1.569) tie the denomination—respectively, Graecia Magna and the Virgilian Hesperiam Magnam—to the expansion of the Greeks and of their colonies in Italy. Remaining in the Roman world, we notice the existence of a group of testimonies in which the name Magna Graecia is transformed, in an evident, though not explicit, comparison with another Graecism, into Graecia Maior: the absolute Greek adjective μεγάλη is interpreted as a comparison which exalts the superiority of the western Hellenic Italiote world. Starting from Livy (31.7.11) to Ovid (Fast. 4.64), to Seneca (Helv. 7.2), to Valerius Maximus (8.7.2), to Iustinus (20.1 s.), to Festus (134 s. v. Maior Graecia): all the testimonies have in common the reference to Italy, whether to part of it (Livy, Seneca, Valerius Maximus and Iustinus) or, more generically to the whole of it (Ovid: Itala nam tellus Graecia Maior est).

Magna Graecia’s memory will last through the centuries. Still in the VI century AD, Procopius of Caesarea, describing Belisarius’ feats, making mention of the distribution of the various peoples on the peninsula, at the end of the enumeration of those on the Ionian and the Tyrrenian Sea, ends by saying (Goth. 5.15.23): “and this is what was, at one time, called Magna Graecia”. Paying
particular attention to the ancient sources, the definition of the territorial ambit of Magna Graecia is repeatedly mentioned by various authors of the Italian Humanism: Leandro Alberti, for instance, reports the opinion of those who, before him, had written about it, identifying it with ancient Italy, and more precisely confines it to "the extremity around the bay of Taras, to the south of the city (according to some), or (according to others) from Metapontum to the Alessus river, border of Rhegium". Alberti has direct knowledge of both Servius (ad Aen. 1.569), who extends the denomination a Taranto usque ad Cumaris, and Pliny, who attributes the southern border to the territory of Locris (HN 3.42: a Locris Italiae frons incipit Magna Graecia appellata), and of Strabo, who, with Antiochus of Syracuse considers Taras out of Italy’s borders (6.1.4; cf. 1.15; 3.1). A more careful re-reading of the classics put the humanists and above all the great Dutch cartographer Abraham Ortelius, at the end of the XVI century, in a position to draw within appropriate borders Magna Graecia, in a famous map that he titled, on the basis of Ovid, Graecia Maior.4

As we can easily see, throughout the numerous sources of every epoch, we come across the conviction that the denomination be confined to the ᾿Ιταλία alone, with the exclusion of the Σικελία, which was also the theatre of intense Hellenic colonization. There is however a very important source to help us understand the meaning of Μεγάλη ᾿Ελλάς ᾿Ελλάς and the dynamics of western Hellenism which seems to extend the denomination to Sicily. About this source there has recently developed an ample debate which has not yet brought forth unanimous opinions,5 but that in the opinion of the writer should bring to the exclusion of the anomalous insular extension.6 It is about a known chapter of Strabo’s Geographia (6.1.2) where he, at the beginning of the discussion of southern Italy’s history, reconstructs and delineates the essence of the development and decline of the Hellenic presence. It is necessary to dwell on this text because on its comprehension depends in large measure the understanding of the true meaning the Greeks attributed to the name.

Strabo starts his outline from the time when the Greeks are not yet present in southern Italy, then inhabited only by indigenous peoples whose names, in the traditional memory, were Chones and Oinotroi. There follows a period when the first Greeks, moving westward starting from the time of the Trojan

4 Prontera 1996d. See map.
5 The issue of Sicily’s involvement in the name Μεγάλη ᾿Ελλάς according to Strabo animated the most recent debate: see Cazzaniga, Calderone, Maddoli, Mele, Musti, Ameruoso (see n. 1), a debate that, despite what seems now clear to me, does not appear as having been concluded yet.
6 Maddoli 1971 and later contributions; Braccesi in Braccesi and Raviola 2008, 5.
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FIGURE 3.1. A. Ortelius, Magna Graecia (Courtesy of Istituto per la Storia e l’Archeologia della Magna Grecia).
war (therefore in the ambit of the pre-colonial period to which date back the first documented contacts) begin their first settlement within the indigenous context: a settlement that evolves in a progressive conquest of territory, in a continual, growing conflict with the indigenous peoples, particularly with the Lucanians who, in the meantime, had moved to the interior. Here Strabo opens a parenthesis and looks at the destiny of these populations, who, after being subjected to the violence of the Greeks of Italy, met with that of the Sicilian tyrants and then the Carthaginians, at war against the Romans for control of both Sicily and southern Italy. Having closed the parenthesis, the Author starts following again the expansion of the Greek settlers of Italy in the following stage (ὕστερον...) the enlargement of the conquered territory and the subsequent submission of both the old and the new non-Hellenic population all the way to the Regin-Messana strait, brings the Greeks of the various poleis located on the Ionian sea coast to reach, with sub-colonies, the Tyrrhenian coast, therefore to actually control the extremity of the peninsula. At this point Strabo ends the period of expansion with a controversial sentence, which has been the object of interpretative debate for or against Sicily’s inclusion in the denomination “Μεγάλη ᾿Ελλάς”. Strabo says, closing the expansive stage in the hinterland: ὕστερον μὲν γε καὶ τῆς μεσογαίας πολλὴν ἀφη ̩ ́ρην ἀπὸ τῶν Τρωικῶν ἀρξάμενοι καὶ δὴ ἐπὶ τοσοῦτον ἡξήντο ὦστε τὴν μεγάλην ᾿Ελλάδα ταύτην ἔλεγον καὶ τὴν Σικελίαν.

The interpretation of this passage has divided scholars, but it can be demonstrated that even Strabo is no exception to the unanimous chorus of those who are in favour of delimitating Magna Graecia within Italia and only in Italia. It is the same uniqueness of the eventual involvement of the Σικελία in the denomination, were one to accept it, to give rise to perplexity and questions: how to explain that an authoritative historian-geographer, who had very present and used both Timaeus and Polybius, and lived in a Roman cultural world from which come many other contemporaneous and as authoritative testimonies on the exclusive tie Italia-Megale Hellas, could deviate from the prevailing current of thought without any explanation? To answer all doubts and to re-align Strabo to the opinio communis it is necessary to read with extreme attention, philological and syntactic, the passage in its entirety.

First of all, one has to observe that in the whole text there is only one subject, grammatical and logical, throughout the passage: οἱ ῞Ελληνες (more correctly οἱ κατὰ τὴν ᾿Ιταλίαν ῞Ελληνες, thus identified at the end of the previous chapter 1 in their relationship with the Lucanians which continues, without any repetition of the subject (῾Ελληνες), at the beginning of the next chapter 2). The matter of the Greeks is articulated in four stages:
1) The Greeks are not present on either of the two Italian coastlines;
2) The Greeks of the first settlements, initially located only along the coastline, who fight for a long time to conquer the interior territories of the barbarians (the same as will happen in Sicily with the tyrants and then—both in Sicily and in Italy—with the Carthaginians at war with the Romans, who will in the end reduce in poor conditions all the local people in much the same way as the Greeks had begun to do: at this point of the text the original μετά has to be put back to replace the μάλιστα coming from modern correction!). Starting from this parenthesis the attention turns to Sicily too!
3) The Greeks who continue (ὕστερον) their conquest deprive the indigenous populations of the greater part of the Italiote inland territory as well as that of Sicily. Καὶ...καὶ...: if one misses this correlation it will be impossible to understand this passage correctly. Great attention has to be paid to the fact that, following the first of the two καὶ, there is, after ἀρξάμενοι, a clarification not introduced by a normal καὶ, but by a καὶ δή, which means “and more precisely”: the Greeks took away from the indigenous peoples the greater part of the “mesogaia” and their power grew so much as to call this Μεγάλη Ἑλλάς. This period ends with the other καὶ correlate: as well as it was the Greeks to subtract Sicily’s control to the primeval inhabitants. In other words, the denomination “Magna Graecia” is within the first paragraph of the correlation and it has nothing to do with the island.
4) Last phase: everything has regressed, southern Italy has fallen again under the barbarians’ control who, in their turn, have actually fallen under the Romans’ control, and the Greeks too who have by now become Romans (καὶ γὰρ αὐτοὶ Ῥωμαῖοι γεγόνασιν).

If this is the available documentary evidence upon the genesis and the location of the expression Μεγάλη Ἑλλάς it is now a matter of answering two questions: who created the denomination and in which historical context? How to

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7 The correct rendering of the text, as commonly conveyed (see Maddoli 1971), is a prerequisite for a correct interpretation of Strabo’s page, either with regard to μάλιστα, which many philologists from Villebrun on have replaced to μετά, or with regard to the next ὕστερον, which many scholars following Kramer improperly corrected with πρότερον. The text is correct in Biffi 1988 (see Ameruoso 1996, 37 too) but the anomaly remains open: the most recent critical edition due to Radt 2003, 130–1 does not offer a reliable text (the scholar maintains μάλιστα, puts ὕστερον between cruces avoiding to translate it, and furthermore considers the name Megale Hellas as inclusive of Sicily).
explain the adjective μεγάλη (μέγα) which unquestionably implies an additional differentiation compared to the simple Ἑλλάς, without assuming, in its more genuine and ancient form, the form of a comparison?

Even in this respect the scholars’ proposals were in any case differentiated or diversely articulated. Until recent years, numerous hypotheses were formulated, but none of them offered a convincing solution, probably because, trying to explain the meaning of the epithet μεγάλη, nobody considered who, according to the available sources, could have created it. If we want to start, as would appear methodologically correct, from the testimonials we have at our disposal, we cannot fail to notice the ample consensus of a great deal of them, starting from the oldest ones, on the existing nexus between the name and Pythagoreanism. In the xviii century, Alessio Simmaco Mazzocchi in his Commentarii in . . . Aeneas tabulas Heracleenses (Napoli 1754–1755) already noticed this, tying the denomination to the thriving philosophical schools of southern Hellenism, and this is the safest beginning to get a reliable explanation. Polybius, and before him the very likely testimony of Timaeus, which followed the unanimous, successive statements of the Pythagorean tradition, both Greek and Latin, indissolubly tie the name to Pythagoras’s coming to the west and to the school of thought there created by the philosopher. As it is known, the Pythagorean teaching was not limited to the speculative level but extended to its implications in the daily reality, to become political planning that, with the growing of the number and the quality of the audience, became a rapid and progressive conquest of power, in an aristocratic but not tyrannical way, in the poleis of present day Calabria.8

Pythagoras had arrived in the west, to live there, around 530 BC, at the time of Sybaris’ greatest splendour, certainly attracted by the level of great wellbeing and prosperity by now achieved, even if in conflict among themselves, by the colonies of the west with the prospect of a thriving shipping activity and of conquest of inland, indigenous territory. Siris, Colophon’s Ionic colony, had reached such a level of wellbeing and luxury—so state the sources—as to provoke the rivalry of the Achaean colonies to the point of being destroyed by an invasion a few decades before the philosopher’s arrival (about 570 BC). Athenaeus, as said earlier, indicates in this blossoming of the western colonies the origin of the expression Μεγάλη Ἑλλάς, to the point that, in relation to the Ionians and more particularly to Siris, there are those who place

8 Bibliography on Pythagoreanism, particularly in Southern Italy, is extremely ample, starting from the seminal study by von Fritz 1940 onwards; this is not the place to reconstruct it. See the useful repertoires of Navia 1990; Giangiulio 2000, i: XXI–XXXI. See also C.H. Kahn 2001; Mele 2013.
it between the end of the VII and the beginning of the VI century. But it is almost impossible that a political contest so lacerated could suggest the comprehensive denomination of a *Hellas* “μεγάλη” especially since all the important conquest of the inland territories hadn't started yet. More reasonable, but still little likely, is the theory that the denomination was already ascribable, before Pythagoras’ coming, to Sybaris’ “empire”, characterized by a luxury of oriental origin and extended, according to tradition (Strab., 6.1.13) to four *ethne* and twenty five *poleis*; therefore Pythagoras would have come to an *Italia* that already knew of a *Megale Hellas*, that Croton was already part of but that would have soon destroyed the original nucleus. Besides the considerations about Siris, against this theory also stand the silence of the explicit testimonies on this matter and the fact that the name is constantly associated with Pythagoras and his school. This one appears to be the context that gave birth to a denomination that would remain alive through the centuries, though circumscribed within a well-defined time frame and geographical space.

As it is well known, Pythagoras gains recognition soon after his arrival thanks to his strong personality and his speeches, which attract and convince an ever growing number of auditors who, for the most part, become disciples and organize, on the Master’s indication, a school that is also a real and proper community. The Pythagorean tradition shows through numerous testimonies how Pythagoras was considered a superior being, almost divine, who, through his teaching and his meditation on the universe’s role and on man’s destiny, indicates and brings to a harmonious social order which, if implemented, will guarantee safety to mankind. Studies already widely accepted and recent studies, lately those of Alfonso Mele, effectively show the climate created in southern Italy by the arrival of Pythagoras and his followers, the latter coming for the greater part from the local aristocracies and well-off classes. The Pythagoreans were put through a preliminary test, then organized in a rigid hierarchical structure which implies specific tasks, some of a strictly financial nature, sub-divided in classes according to age and learning; they were directed since their youth to civic education and then to a political orientation, which, for some of them, became a specific role (*politikoi*), whereas others devoted themselves to philosophy and to studying, *to mathemata* in the four main disciplines: arithmetic, geometry, astronomy and music. In this real and proper sect of a high cultural level, progressively structured in *synedria* present in the various *poleis*, the *politikoi* represent the highest step. As Polybius states (2.39.2) they usually

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10 Mele 2013, 105–11.
11 Mele 2013.
were οἱ πρῶτοι ἄνδρες of the various cities, whose presence however generated internal conflicts with the local aristocracies: Pythagoras himself was involved and had to leave Croton for Metapontum because of the opposition of Cylon, who hadn’t been admitted to the _hetairia_, and that of his followers. The vast network of the _synedria_ was able to offer to the government of the _poleis_ an aristocratic ruling class that was economically strong and culturally qualified. As a result of this, as reported by Aristoxenus,\(^\text{12}\) in spite of internal fractures and frictions “the _kalokagathia_ of the Pythagoreans and the will of the citizens had for a certain time the upper hand and, as a consequence, the management and government of their cities (τὰ περὶ τὰς πολιτείας) was entrusted to them”.

The expansion of Pythagorean control to all of Italy’s Achaean cities started by Croton, together with the progressive conquest of the inland territory, taken from the Lucanians up to the reaching of the Thyrrhenian coast with the foundation of new _poleis_ and the subjugation of existing ones, was the main characteristic of the history of this area of the peninsula between the end of the VI and the beginning of the second half of the V centuries.\(^\text{13}\) Croton founded on the Thyrrhenian Sea Terina, which according to Apollonides of Nikaia (in Steph. Byz. s.v.) was strictly connected to the denomination _Megale Hellas_ indicating the extension of an area spanning the two seas; with the same purpose Croton bound to itself, starting at least from the second decade of the V century, other coastal towns such as Laos, Temese and Pandosia through economic domination, there minting with their own symbol, as Sybaris had done before in the subjugated _poleis_. The vanquishing of Sybaris (510 BC), and the failure to take away territory from Locris owing to the defeat suffered by the Sagra River in the middle of the VI century and the following internal crisis, had enabled Croton to expand its “empire” at Sybaris’ expense and, after initial internal conflict between Cylon and Pythagoras, followed by the banishment of the latter, and to create a politically homogeneous consortium with Metapontum. Soon the Pythagoreans got the better over the Cylonians and got

\(^{12}\) Iambl., _VP_ 249 = F 18 W.

\(^{13}\) On Croton’s expansion inland, but also on the growth of the other Greek colonies on the coast of the Ionian sea at the expense of non-Hellenic populations of the interior, the literary sources are confirmed extensively and in detail by archaeological research, which has increased in richness in recent decades. See the annual review in the Proceedings of the Taranto International Meetings on Magna Grecia (Atti dei Convegni Internazionali sulla Magna Grecia—Taranto: 1961 ff.); particularly _Crotone_ (XXI11) with Mele 1984; Giangiulio 1989; Belli Pasqua, and Spada 2005. On native populations of the area, see: Pontrandolfo Greco 1989; Guzzo 1989; De Sensi Sestito 1995; De Sensi Sestito, and Mancuso 2011. On the processes of acculturation see Malkin 2001, 2003; Luce 2007; see now the Proceedings of the LIV International Conference on Magna Graecia, Taranto 2014 (forthcoming).
back Croton’s government, even though the conflicts with the Cylonians lasted to the very end of the Pythagoreans; Milon, the famous Olympic champion and Pythagoras' son in law, was from Croton: in his house the politikoi met to make decisions περὶ πολιτικῶν πραγμάτων (Iambl., nr 249). In the meantime Pythagorean synedria were consolidating in Caulonia and in Locri; Pythagoras followers’ influence was changing from ethical-cultural yeast into political control of the poleis. However their control was never easy because of the attraction among the aristocrats and the social and ethnic unrest that the recent conflicts had intensified, to the point of provoking right in Croton an attempt to establish a tyranny such as Klinia’s.

However, it is in the period of success of Pythagoras’ school and of the flowering of the Pythagorean synedria, between the end of the VI and the middle of the v century, that in a large area of today’s Calabria and Lucania, takes place a substantially uniform Greek control that overcomes and absorbs, thanks to Croton’s growth, even Sybaris “empire”. Through the internal river valleys linking the Ionian and Thyrrhenian Seas, the apoikiai have achieved strength and splendour, the indigenous populations have been subdued and progressively hellenized, the “barbarians” come to Pythagoras’s school. The Achaean colonists brought this extraordinary result about, the heirs of the ὑιὲς ᾿Αχαιῶν, the heroes of the ᾿Αχαιίς γαῖα in the epos (cf. Hom., Il. 1.254, 276), the descendants of the ᾿Αχαικὸν ἔθνος (Hdt. 8.73) historical offshoot of Mycenae’s realm. A connection through time joins the western Achaeans from VI–V century to the Achaeans who in the Mycenaean age destroyed Troy and later brought Hellas to the East and now too threatened by the Persians: at the present time, those who have made in the West, in final form, the Hellas to the expense of the barbarians of the Italia, are still the Achaeans. A great, enormous Achaean success, reason for pride and praise.14

At this point we have to go back to Strabo’s chapter 6.1.2, to the sentence that has caused so many discussions about whether Sicily was included in the denomination Μεγάλη ᾿Ελλάς or not. We already saw that the subject, both grammatical and logical, of the whole chapter is οἱ Ἕλληνες, earlier absent from Italy, then founders of apoikiai on the coasts, then winners, through these, over the Chonians and the Oinotrians, then antagonists of the next wave of barbarians (the Lucanians), who had replaced the previous inhabitants; then (ὑστέρον) the Greeks overcame the barbarians and succeed in taking away from them most of the μεσόγαια—where they were increased to the point of calling it Μεγάλη ᾿Ελλάς—and Sicily. This reference to the island, and to the conquered inland territories before the coming of Romans and Carthaginians,

is evoked by the preceding mention of Sicily in the parenthesis focused on it; it doesn’t belong to the original denomination! But we didn’t come back to Strabo to re-state what was already discussed and stated, but rather to focus on the verb and the concept through which the idea arose of a progressive expansion of the controlled area, the growth to the maximum extent possible in the conquered area: ἐπὶ τοσοῦτον ηὔξηντο > αὔξησις > αὔξάνεσθαι.

The idiomatic expressions ἐπὶ τὸ μέγα αὔξάνειν / αὔξάνεσθαι, ο αὔξάνεσθαι μέγα(ς), in classical Greek, are used to convey the idea of growth, of a progressive increase up to a high level of development compared with an exiguous starting point. The morphology confirms that the suffix -ανω indicates the accomplishment of a process. They are neutral expressions, meaning that they are applicable to the most diverse situations, where the “great” result obtained does not imply a comparison with other inferior realities (with the exception of its own starting point), but just the outcome of a growth process. It is sufficient to mention a few examples: δεῖ γάρ νιν ὄντα παῖδα . . . αὔξησθαι μέγαν (Eur., Bacch. 183); μέγας ἐκ μικροῦ . . . τὸ κατ’ ἄρχας Φιλιππός ηὔξεται (Dem., Phil. 3.21); οὔτε ἐπὶ τὸ μέγα δύναται ἡ φωνὴ εἰς ἄπειρον αὔξειν τὴν διάστασιν (Aristox., Harm. 14); extremely clear Aristoteles’ example ([Ath. Pol.] 3) about the archonship: γέγονεν ἡ ἀρχὴ μεγάλη τοῖς ἐπιθέτοις αὔξησθαι.

In order to clarify definitely the genesis of the expression Μεγάλη ᾿Ελλάς, which in Strabo’s passage is explicitly connected to the verb αὔξάνειν, it is sufficient to compare the use of the expression made in the analysis of the development of the Hellenikon by the most influential Greek historiography. Thucydides’ conception, too widely known to insist on it, expressed in the “archaiologhia” about the growth of Hellenism, is entirely inspired by the concept of αὔξησις:15 a Greece that, because of the continued moving of its people cannot grow like Attica (μὴ ὁμοίως αὔξηθηναι) and that even after the Trojan war remains unstable ὡστε μὴ ἡσυχάσασαν αὔξηθηναι (1.11). But Herodotus had already clearly expressed the same idea using analogous terminology about the growth of the Hellenikon, which, initially feeble, progressively αὔξηθαι till the attainment of a πλῆθος τῶν ἐθνῶν differently from the pelasgic substratum, whose character was the οὐδαμὰ μεγάλως (!) αὔξηθηναι. We are faced with a concept of progress as “conscience of the αὔξησις” coming from the diligence and the intelligence of man, that characterizes Greek thought in the V century, antithetic to the old image of human history in progressive decline from an original golden age, as so many studies have clarified,16 starting from a situation

15 Mazzarino 19733, 274–6.
16 On ἀσθένεια see Schütz 1964; on μέγας Bissinger 1966.
of ἀσθένεια, of weakness, to achieve a situation of fullness, of "greatness": from ἀσθενές to μέγα.\textsuperscript{17}

At this point the genesis of the expression "Magna Grecia" appears clearly in a cultural context of archaic Hellenism, in a vision of the world matured in the Asian Ionia from the pre-Socratic speculation on the physis and applied to the origins of the ethnēs and of the state; a speculation on the initial asthe-neia that is gradually overcome through the auxēsis. It reaches us through the voices of Hecataeus, Herodotus and Thucydides; for the great historians of the V century the weakness shows itself through scarcity of population, ethnic and political instability and the absence or the precariousness of the poleis.

It has been hypothesized, even though there is no certainty, that behind the growth process of the Hellenes in the Italia as traced by Strabo, it may be possible to surmise the περὶ ᾿Ιταλίας of Antiochus of Syracuse;\textsuperscript{18} however it clearly appears that the definition Μεγάλη ῾Ελλάς arose in the Greek environment of southern Italy, from the Greek people living there and proud of having been the artificers of so much growth and therefore thanks to them here, and only here, Hellas has finally become μεγάλη. This is confirmed by the total absence of the expression both in Herodotus and in Thucydides, even though they devote careful attention to this western Hellenism and have at the same time an ample and overall vision of Greek history. On the other hand, the expression implies a reality of actual political and economic development together with a unity of ethnic roots and of aims pursued and achieved by the protagonists of such development. There is only one subject with these characteristics: the Achaean settlers. First with the alliance that enabled them to destroy Siris, then with Sybaris' blooming, finally with the supremacy of Croton, the city that received Pythagoras, that destroyed and incorporated Sybaris' empire and definitely subjugated the Lucanian peoples, that created the web of the Pythagorean synedria and radiated a philosophic, religious, political, naturalistic thought that attracted the attention and the presence of the aristocracies of the whole peninsula and of Sicily.

The insistence of the majority of the ancient testimonies on the connection between Megale Hellas and Pythagoreanism together with the poleis' blooming in this part of the Italia, can neither be neglected nor underestimated. In other words, the Achaeans of Italy were the ones to coin the denomination between the end of the VI century and the beginning of the V,\textsuperscript{19} and more precisely the

\textsuperscript{17} Maddoli 1971.
\textsuperscript{18} Momigliano 1929 (= 1975); Maddoli 1982; contra Musti 2005, 114–6: but the topic "non risulta che Antioco abbia mai parlato di Sanniti" does not seem decisive.
\textsuperscript{19} Giannelli’s conclusion (1934) is thus confirmed.
Pythagorean Achaeans, who could proudly claim to have achieved that political, economic and intellectual flourishing that had characterized the “empires” first of Sybaris and then of Croton. With them, the Greeks in the West, Greece had really and tangibly become μεγάλη.

_Megale Hellas_ did not have a long life: it ended with the collapse of the Pythagorean _synedria_ at about the middle of the 5th century, owing to the internal conflicts of the Greek cities and the contemporaneous come-back of the Lucanians. The high balance between thought and politics reached and extended, not without internal resistance, to the Achaean _poleis_, was broken. Polybius (2.39.3) reports of the κίνημα ὁλοσχλερές that overcame the πρώτοι ἄνδρες of all the Pythagorean cities; he saw them prey to slaughter, rebellion and widespread disorder. That western Greece could no longer be called μεγάλη.

The denomination remains confined to the time and space of those who formulated it. It surely is of scholarly origin, because it presupposes a conceptual reflection on the idea of progress; it didn't originate from an outside and superficial observation. This consideration brings to mind an added refinement of its meaning, irrespective of late interpretations of the Roman period; these latter in effect, translating it into Latin as _Gracia Maior_, introduced a juxtaposition of superiority towards continental Greece where the settlers had come from; an interpretation also made by some modern scholars. On the contrary, it can be stated that at its origin the term did not imply any comparison with another Greece—the other—but, on the contrary, it represented, in the mind of its creators, a complement and an increase.

In this direction a notation of Philon Mechanicus (2.57; 111/11 cent. BC) can be of help: τὴν Ἑλλάδα Ἑλλάσι πολλαῖς παραυξήσας: implicit, in the use of the verb αὐξάνειν and of the various experiences of _Hellas_, is the idea of a growth that expands but does not oppose, of an original _Hellas_ that, with time, enriches of other manifestations of an _Hellas_ differently situated while remaining always only one _Hellas_. The awareness is indeed clear cut and univocal (Herodotus, Pindar, Thucydides, etc.) that, wherever some Hellenes are durably present, there is Ἑλλάς: the more the Greeks establish themselves beyond the archaic borders of the original _Hellas_, the more Ἑλλάς, as well as

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20 Interpretation rightly rejected already by Cantarella 1968.
21 Meyer 1889, 2: 274, in a brief note (n. 12), had rightly connected the expression to the original homeland of the _Achaioi_ in Thessaly, however attributing a sense of opposition to that.
22 See the sentence by Aristoteles ([_Ath. Pol._] 3) about the archonship: γέγονεν ἡ ἀρχὴ μεγάλη τοῖς ἐπιθέτοις αὐξηθέσια.
the Ἑλληνικόν, expand while remaining unique. Similarly, in the conception of the Greeks, the polis is not first related to a spatial concept, to the walls or to the territory, but to the politai belonging to it. The Ἑλλάς of southern Italy, in the proud awareness of the Pythagorean Achaeans who conquered, achieving political control and cultural unity of so vast a territory, could claim more poleis, more inhabitants and more subjugated ethne: actually it constituted a real expansion of Hellas, a growth that took place there, in the Italia, as Ἑλλάς μεγάλη. Cicero too, and it is not by chance in this context, uses twice (Tusc. 4.1.2; Arch. 10) the simple Graecia in talking about Great Greece. With the end of the Achaean political Pythagoreanism and the break-up of the reality accomplished by themselves, also the denomination ceased to exist: only its memory remained.

That the original expression might be amplified and generalized as a consequence of the radiating of the disciples of the philosopher of Samos and the diffusion of the Pythagorean schools’ thought from the Sicilian Pythagoreans (Empedocles, Epicarmus) to Archytas from Taras, is entirely possible; and if it was so, it still was a Magna Graecia pythagorically connoted; an image of Megale Hellas in absolutely cultural terms. The very fame of the great Hellenic colonies, continuing through time, in addition to and independently of the Achaean poleis connected to the true Pythagorean regimes, made the extension easier, as stated in the later sources.

In this sense we can certainly speak of a further and more extensive meaning of the term, without ever having Sicily included in the original denomination. The Romans, by now, will have lost the meaning and the original use of the term μεγάλη and in many will appear the idea of a comparison with continental Greece (Graecia Maior). A Magna Graecia, this later one, not well defined and not anchored to its true historical, temporal and territorial roots, heir to the memory of an elevated Hellenic civilization realized in southern Italy and from here spread by virtue of a doctrine that found followers throughout the Mediterranean world, as attested by the long list of Pythagorean philosophers at the end of Iamblichus’ Vita Pythagorica.

23 “It is men who make up the polis, not walls or ships…”: Thuc. 7.77.7.
CHAPTER 4

Systems of Borders in Ancient Greece

Giovanna Daverio Rocchi

1 A Multifaceted Dimension

Ancient Greeks employed geography to shape a natural and flexible border corridor that was identified with the outmost fringes of the territory they inhabited. It was the liminal areas in the western Mediterranean and north in the Pontus and Balkans that became bridges between different peoples and cultures, and, in the course of time, gave life to a frontier Greekness permeated by contacts with the anhellenic world. In some regions, border states with very composite ethnic elements arose and developed into a new type of Greek society.1

Geography applied according to Hellenocentric cultural models mapped alternative borders, elaborated around symbolic places, which took on multiple meanings with regard to the different contexts they referred to. Geography made up of the Thermopylae, the “Hot Gates”, the principal access by land to central-southern Greece, through which all the great invasions upon the Hellenic territory had to pass. After the sacrifice of the three-hundred Spartiates attempting to halt the Persian advance here, Hellenic imagery identified them as the boundary between Hellas and the outside—though a large part of Greece lay beyond of them—because they represented the space that provided visibility to the cultural divide between free peoples and subject populations. Different readings allotted the Thermopylae to within the regional frontier. Here processes of political and territorial unification unfolded, to which we can ascribe the historical origins of the eastern Locrians, as well as the Phocian resistance to Thessalian domination which led to the foundation of the Phocian federal state.2 The Thermopylae were also a sacred frontier: the cult centre of Demeter in its position “at the Gates” was, materially and symbolically, a liminal sanctuary that demarcated the space of the Hellenic religiousness, expressed by the Pylaic-Delphic Amphictyony through complementary roles between centre and border with the sanctuary of Apollo at Delphi.

1 See Tsetskhladze 1998; Braccesi 2003, 13–18.
2 Locrians: FGrHist 115 F 63; FGrHist 239 A 5. Phocians: Hdt. 8.27–28; Paus. 10.1. 4–10; Plut., De mul. virt. 2.
Complying with the arrangements established by the 387/386 koine eirene, geography supported the separation between the Great King’s sphere of power and the world of the poleis. The eastern coasts of the Aegean came to constitute the long land belt of the boundary between Greeks and Barbarians. Athenian imperialism in the Aegean, and Sparta’s primacy in the Peloponnese, created peculiar forms of borders that belonged to the dimension of supremacy and hegemony. The cleruchies, settling groups of Athenian citizens in economically and militarily strategic sectors outside of Attica, in as much as they were outposts of Athenian expansionism, represented the front of Athenian power outwards, marked by the displacement of human resources. The phase of Spartan expansion in the Peloponnese between the 8th and 7th centuries BC gave a congruous context for the Laconic apophtegma, according to which the Lacedaemonians claimed to own anything they touched upon with a spear. This way of thinking would find new interpretations in the Hellenistic age when the territorial acquisitions from conquest in war got their legitimisation through the notion of doriktetos chora and the border took shape from the link between territoriality and the power of the ruler.

There is a kind of border that belongs within the discourse of ethnicity. The border of ethnicity allows one to know how a social group, aiming to partake in a homogeneous self-representation, builds its identity and uses it as a bulwark to reinforce membership and exclude what lies outside. The border is shaped by the perception of the margin through a dialectic relationship between ethnic homologies, religious, linguistic and cultural specificities, geographic and political peculiarities, which altogether concur in moulding a common and shared perception of identity. In this way the border of ethnicity is not symmetrically specular to the physical geopolitical boundary; instead, collective perception makes it a flexible dimension that can be deconstructed and recomposed according to what the social group means to communicate outside. This does not mean that the border of ethnicity must be considered simply as an abstract category, or as a form of social togetherness disjoined from the territorial context. The distribution on the territory of some categories of artefacts, dating back to the Iron Age, represents a socially and subjectively elaborated

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3 Xen., Hell. 5.2.1.
4 Plut., Ap. Lac. 28 = Mor. 210 E.
strategy aimed at establishing a correspondence between peoples and communities and the part of the land they settled in. In other words it reflects the conscious use of markers of identity for the border which shaped a semiotic system allowing one to identify the boundary of the space of togetherness.\footnote{Rokkan 2002, 140–146. See also Antonaccio 1994, 79–104; Hall 1997, 19–26.} The borders of ethnicity must thus be considered as a complementary and basic component of the processes of territorialisation associated with poleogenesis. So borders functioned as effective signs of identity.

Among the \textit{ethne} of central-northern Greece mythical and religious traditions contributed to reinforcing the consciousness of common tribal togetherness. Yet ethnic borders were adapted to territorial criteria, so superimposing on and intersecting a kind of identity based on vertical control of time with one based on the horizontal control of space.\footnote{See Morgan 2003; Daverio Rocchi 2011a, 3–20.} But it would be imprecise to think that ethnic boundary strategies were primitive forms of delimitation, left over from the pre-political past. Rather, we must take into account their constructive nature: the concern was to trace the boundaries of tribal and state membership, anchoring them to consciously elaborated and selected reference signs. So historical borders came to be enmeshed with the boundaries of memory, in order to re-write the past according to the present.

In their historical development systems of borders entered to a polycentric and multi-polar framework. The discourse on liminality is not related to cultural otherness but rather to issues raised by the coexistence within a network of autonomous and independent states, homogeneous in their forms of life, customs and traditions, social and political organisation, and religion. To this galaxy of \textit{poleis} corresponds a mosaic of borders that contributed to multiplying the places of membership. Since the territorial delimitation circumscribed the space wherein the citizen could exercise his right—first and foremost partaking in political life, land ownership monopoly, judicial protection and common cults—the border carried out a civic function. It had a discriminatory function too, because in the same space certain classes of inhabitants were institutionally excluded from citizenship. Therefore the border of civic identity had a double function, both inclusive and exclusive.

The poleocentric perspective determined the cultural otherness that traced a sort of hidden frontier enclosing the Greece of the \textit{poleis}, and so assimilated the inhabitants of central and northern Greece, dwelling in village communities in Thucydides’ time, with the barbarians.\footnote{Thuc. 1.5.3; 3:94.4–5; 95.3. For the hidden frontier see Cole, and Wolf 1974.} It was the \textit{polis} model which strengthened the metaphorical meaning of the walls of the city of the
Boristhenytes, within which the Scythian king Scyles, once the gates were shut, would cast off his country’s customs, wear Greek dress, and enjoy the Greek lifestyle. In the polis, civic identity encompassed a network of affiliations that included the family, the phratry, the deme, public and private religious associations such as the thiasoi and orgeones, all of which generated as many personal, social and cultic boundaries. This was not so much a set of rising tiers of identities, but rather a ramification of invisible borders that were activated in different situations and according to the objectives and expectations the circumstances dictated. In spite of the network of micro-borders drawn up by the territorial distribution of the poleis, we must refuse to believe that these boundaries compel reading the polycentrism of Greece as a kind of particularism. The awareness of belonging to a shared system of values, religious beliefs, language, customs and traditions, unified the local and regional identities into a common Hellenic consciousness that made autonomy and freedom of the poleis a cardinal principle of its political system.

2 Signifying Definitions

In modern studies boundary, frontier, border (and its derived words borderline and borderland) are terminological definitions addressing different perspectives of research. J.R.V. Prescott vigorously endorsed a strict semantic distinction between boundaries, as lines demarcating state territory, and frontiers fitting within liminal spaces and so privileging the dimension of breadth. According to F. Barth, the boundary is a complex cultural model, or rather a syndrome of ideas, because it ranges from a line dividing territories on the ground and separating distinct social or political groups to a schema conceptualizing distinct categories of the mind. As Donnan and Wilson do not fail to explain, since the last twenty years of the past century “borders” have acquired a new significance on the grounds of theoretical developments. Border studies pay attention to liminal zones as places where a set of practices and experiences can give life to a society different from the one at the core. Lately, interest has turned to single case-studies, so that the history of borders comes to shift into the history of borderlands. It means to look at the border region and

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10 Hdt. 4.78.3–5.
11 Prescott 1987, 12–14: “there is no excuse for geographers who use the terms “frontier” and “boundary” as synonyms”. For a full bibliography up to the 1980s see Daverio Rocchi 1988; 2007, 87–105.
its people as important forces in their nation’s and state’s relationship with
the territory, but also to focus on how communities and local institutions in
border areas are caught between two often competing national societies.\(^\text{13}\) So
the terms border and borderland become “increasingly ubiquitous” in order
to point to a range of situations linked with liminal spaces.\(^\text{14}\) Yet we cannot
avoid remarking that sometimes all the above mentioned terms are employed
as synonyms, though it is clear that they cover different phenomena. I wish to
premise that in the following pages this lexical distinction will be respected,
though I agree with those scholars who believe that these terms are not neces-
sarily discriminatory.\(^\text{15}\)

The system of the *polis* contributed to the institutional formalisation of the
boundary and prompted reflection over liminality in the domain of geogra-
phy and history, as well as of politics and philosophy. Strabo and Pausanias—
respectively familiar with the Greek world of Augustean Age and of the 2nd
century AD—focused their attention on the *polis*, which they identified as the
typical kind of settlement in Greece in past ages, and they illustrated its ter-
ritorial and political features. For both authors, borders fulfilled a conspicuous
function among the components of territoriality. Strabo\(^\text{16}\) considered them an
element of taxonomy, and in this perspective he reckoned the internal bound-
daries of Attica as the example of situations of conflict and controversy where
definite delimitations with visible land-marks were lacking:

Where there are no precise boundary marks, columns (ὅροι), or walls, as
at Kollytos and Melite, it is easy for us to say such a place is Kollytos, and
such another Melite, but not so easy to show the exact limits: thus dis-
putes have frequently arisen concerning certain districts [. . .].

Pausanias\(^\text{17}\) stated that Panopaea in Phocis could claim the status of *polis*,
even though it lacked a seat of government, gymnasium, theatre, agora and
water-system (this latter in accord with the Roman image of the city), not only
because it had the faculty of sending delegates to the pan-Phocian assembly
but because it shared territorial boundaries with its neighbours (ὅροι τῆς γῆς ἐς
tοὺς ὁμόρους).

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\(^{14}\) So Donnan, and Wilson 1999, 14.
\(^{15}\) Viazzo 2007, 21–44.
\(^{16}\) Strab. 1.4.7.
\(^{17}\) Paus. 1.4.1.
Authors of the Classical period held the notion of borders as a system circumscribing the portion of land subject to a central authority.\textsuperscript{18} Although philosophical reflection and political thought privileged the social aspects of the \textit{polis} as a community of citizens (\textit{κοινωνία τῶν πολιτῶν}) according to the definition provided by Aristotle,\textsuperscript{19} also for this philosopher, and before him for Plato, the principles of equity and justice, meant to foster social harmony and create a homogeneous and cohesive society, could not be achieved without eliminating those differences in citizen status caused by unequal distribution of resources, mainly agrarian, due to the fact that the land on the borders was poorer than that at the core.\textsuperscript{20}

The lexicon outlines a semantic field of marginality which can be seen in the nomenclature for the border preserved in Pollux’s \textit{Onomasticon} in the section on the city and its subdivisions:\textsuperscript{21}

And concerning the parts out of the city: the boundaries (\textit{δήροι}), the boundary market (\textit{ἐφορία ἀγορά}) the borderlands (\textit{ἐσχατιαί}) […] And from the borders, and the boundary stelae, and the river between borders (\textit{μεθόριος}), […] and the war for the borders (\textit{ὑπερόριος πόλεμος}), and the procedure of tracing the borders (\textit{διωρισμένον πρᾶγμα}), and annexing a territory, and demarcating a region, and banishing someone beyond the borders, […] and removing the boundary markers. He who traces the border (\textit{ὁ δὲ ὀρίζων}), the one who marks the boundaries (\textit{ὁριστής}).

These lexemes refer to the morphology of the boundary as much as to its function in marking out divisions or contiguity, and moreover to its role as a cause of conflict, or in supporting economic projects in the borderlands. They mention the epiclesis \textit{horios} attributed to the patron gods of the borders, they list the procedures used in drawing the boundaries and the titles of the officers charged with tracing and checking the border, they make a distinction between a boundary line and the internal and external borderland. The lexicographer’s nomenclature presents a stratified vocabulary taken from different contexts which originally had no spatial, chronological or historical relations, yet altogether it contributes to defining a sort of lexical technology of the border.\textsuperscript{22}

\textsuperscript{18} For the sources see Daverio Rocchi 1988, 49–68.
\textsuperscript{19} Arist., \textit{Pol.} 3.1.1275 a. Yet the image of the city of men dates back to the archaic poetical tradition, and it is resumed in Thucydides. Cf. Hes., \textit{Op.} 270–272; Alc. F 426 l.P; Thuc. 7.77.7.
\textsuperscript{20} Pl., \textit{Leg.} 5.745 b-c-d-e; Arist., \textit{Pol.} 7.10.1330a.
\textsuperscript{21} Poll., \textit{Onom.} 9.8.
\textsuperscript{22} Cf. Daverio Rocchi 2007, 87–105; Freitag 2007, 49–70.
The list provides a window on the many and complex situations that, in the course of time, developed around the issue of liminality and it provides a veritable boundary vocabulary.

Epigraphic documents preserve extensive evidence on demarcation acts. They give very detailed descriptions of specific borders and of the dynamics leading to their creation. These texts cover an extensive chronological range and show similar practices in nearly all the territories inhabited by Greek speaking populations. Differently from Pollux’s list, the epigraphic evidence sheds light on situations in action: it proves that demarcations were a consolidated and widespread practice, consistently employed to define the extension of the polis territory and to organise contacts with the outside world. All the testimonies concur in defining the border as a key device in order to control the political space, and to emphasize its interlocutory nature in the network of territorially contiguous cities. Overall the epigraphic documentation conveys a set of practices and behaviours on the grounds of which we can understand how, in ancient Greece, borders belonged within a discourse involving geography, history, law, economy and religion.

From the 3rd BC there was a sharp increase in the number of border disputes between poleis. With the advent of Hellenistic kingdoms and later in passing into the sphere of Roman power, the cities saw their political autonomy progressively reduced and limited to chiefly administrative functions and roles. It seems then that the need to preserve the integrity of the city’s territorial extension reached the point where claiming even small portions of marginal land became a matter of importance in the relationships between neighbouring poleis. The impression is that, in a world such as the Hellenistic one where cosmopolitanism became a way of life as well as a form of thought—enforcing Diogenes’ statement on being a citizen of the world—the boundary of the poleis took on new meanings. A significant part of the epigraphic documentation comes from cities outside of the circuits of the major centres of decisional power. When the boundary lost its function of circumscribing spaces of territorial sovereignty, it put on symbolic weight and became the main source in redefining particularisms and local interests. It embodied small-scale regional narratives that intersected, without altering, the big stories of the spaces of political homologation. Contemporaneously with the decline of the political role of the poleis, the importance attributed to their borders grew. Boundary litigations became a rhetorical topic in the speculation on concord, which had good fortune in the philosophical tradition of the Hellenistic and Roman age. Dio Chrysostom used the dispute opposing his city Prusa and Apamea

\[23\] Cf. Dio Chrys., Or. 40.
to call the two litigants to reconciliation, appealing to all the arguments that made the boundary a tool of unity rather than of division, comparing the meaning of territorial contiguity to the blood ties created by marriage and children, to the legal obligations produced by reciprocal grants of citizenship, to the sharing of cults, ceremonies and religious rites. From being a device of spatial demarcation, borders became a way to reinforce the all pervasive meaning of a moral category.

3 Shaping the Boundaries

The boundary legitimises the territoriality of the polis as the key structure of horizontally shaped civic organisation. The controlling function that political and/or administrative power exercised over the State territory made it necessary to know how far the land stretched. In this perspective the boundary tended to be a line that drew the geographical and social perimeter of the entity circumscribed. Therefore, as above discussed, borders were true markers of identity. On the other hand they could fulfil an important function of interplay between adjacent communities. In Aristotle’s opinion the relationships with neighbours was at the basis of the system of relations that constitutes the very essence of the polis:24

And it is said that in laying down the laws the legislator must have his attention fixed on two things, the territory and the population. But also it would be well to add that he must take into account the neighbouring regions also (τῶν γειτνιῶντας τόπων), if the city is to live a life of intercourse with other states and not one of isolation.

Hence it seems that the borders acted in two directions: inwards expressing a set of conditions that gave the perception of a closed system and the consciousness of a common identity, and outwards qualifying as the sign of an open system of flexible relations. Overall they provided an answer to the need of the polis for normalisation and stability in both internal and external relations.

The institutional formalisation of the boundary entailed the use of tools to recognise it. It materialised into a system of symmetrical and reciprocative signs that could indicate where one state’s territory finished and the neighbouring one’s began. The term horos indicated the boundary in a general sense,

24 Arist., Pol. 2.1265a.
as well as the line that demarcated it, and also the material marker on the ground. To this purpose conventional identification devices were employed, recurring to elements of the landscape, such as orographic or water systems, more generally elements that somehow created discontinuity in the natural landscape, and integrating them, where these were not sufficient, with artificial markers such as boundary stones, stone mounds, walls and ditches, as well as with markers of sacred value, from simple statues of gods, and modest altars and shrines, unto great temples, according to a custom that Strabo attributes already to remote antiquity. These markers set the border within a sacred landscape and constitute a key element embodying a network of connections between divine protection and human control. Some gods can be characterised by specific attributes of liminality, such as Hermes and Artemis, or they may take on this attribute by the epiclesis of Horios/Horia; moreover divine or semi-legendary figures should be added, connected to woodlands or to aquatic environments of the borderland, such as Pan and the Nymphs. The boundary of the Thracian Chersonese was marked by the altar of Zeus Horios. We may identify a cultic system of the border with specific characteristics different from the cults celebrated at the core. In more ancient periods border sanctuaries could play a decisive role in the territorialisation processes connected with poleogenesis. The cult places of neighbouring communities were at the heart of processes of political unification, such as in the case of the Argive Heraion, or they marked the completion of territorial annexations, as in the case of the Limnaion after the Spartan conquest of Messenia.

The boundary line was permanent, inviolable and unmovable. Legal restrictions and divine sanctions supported its sacred value, so that transcending the boundary line, removing or tampering with the horoi, constituted transgressions that violated the laws and moreover offended the gods. One law from Chios states:

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25 Strab. 3.5. 5.
26 Pausanias’ Periegesis provides numerous testimonies of liminal sanctuaries which he considers as peculiar features of the monumental landscape of the borderlands. They are often mentioned among the signs that draw the borderline in the epigraphic sources. See Daverio Rocchi 1988, 54–57.
If one shall remove, break or render invisible one of the *horoi*, he is committing a crime towards the city, he shall pay a fine of one hundred staters and shall be deprived of civic rights (*atimos*).  

According to the regulations for the border dispute between Sparta and Megalopolis:  

The stelae and the boundary stones erected complying with the verdict, shall have permanent value and nothing shall have higher authority.

The Solonian law quoted by Gaius states:  

Do not displace the boundary.

The first agrarian law of Plato concerns Zeus Horios and establishes that boundary lines shall be immovable.  

The chief criterion was that of visibility. Seeing the boundary with one’s own eyes, i.e. autopsy, gained great authority for certifying its lay-out on the ground. Xenophon has the Corinthian aristocrats say that ensuing the synoecism with Argos, their city had become invisible (*ἀφανιζομένην τὴν πόλιν*) since the boundary stones marking their territory were going to be destroyed. Corinth’s invisibility is a strong metaphor expressing how the material destruction of the boundary markers affected the political system. The synoecism of Corinth into Argos takes place in a dramatic situation of civil war, but it was customary in a synoikistic *sympoliteia* to remove the *horoi* after political unification. This was the case of the Plataeans when they joined their land with the Athenian one before the battle of 479 BC. Returning to the original conditions was admitted, and authentication was provided by the written record of the boundary, as is attested by the *sympoliteia* between two cities in Thessaly:  

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29 Haussoullier 1879, 230–255.  
30 *Syll. 3* 665, lines 20–23. Ca. 164 BC.  
31 Gai., *De fin. regund*. 11.1.13 D.  
33 Xen., *Hell*. 4.4.6.  
35 See Daverio Rocchi 1988, 143–151, no. 2 B.
If the inhabitants of Peraea shall withdraw from the sympoliteia with the inhabitants of Melitea, as concerning the boundaries of the territory they will refer to those recorded in writing.

Demarcation was carried out on the basis of practical experience, following an itinerary, which coincides with the route followed by the officials entrusted with setting the boundary on the ground:36

The boundary of the territories of the inhabitants of Xyniae and of Melitea shall be that which the inhabitants of Melitea took me to inspect: from the temple of Boreas in the valley, in the spring of Charadros; and from the spring in the woods in the direction of the fulling place; from the woods into the carriage road; from the road in the Ionean hills; from the Ionean hills into the Ainnaios woods; from the Ainnaios woods into the Charadros river; from the Charadros river into the mound; from the mound into the spring called Xytaris.

In addition to the border as it was marked out in the landscape, we must also take into consideration a second level of visibility: that created by the written codification of the border. The description of the layout of the boundary line was transferred onto an inscription stone and publicly displayed. Therefore the real landscape corresponded to a codified visibility in which the features of the geographical landscape, the boundary stones and stelae, undergo a process of homologation and become the markers through which a geometric boundary line can be drawn, resulting from the combination of all the segments joining each reference point. The written transcription operates a selection of the landscape: what can be read is a partial landscape that coincides with the features chosen to draw the boundary line. An epigraphic recording allows one to survey the whole border at once, while the material boundary is constituted by markers placed at great distances one from the other and spread along a course that could at times be very long.37 The places where the inscription could be displayed were multiplied: not only in the cities concerned, but also in the major poleis of the region, and in regional and Panhellenic sanctuaries, and so the local boundary was embedded within broader information circuits.


Writing had an essential role. It favoured a standardisation of the lexicon and of the procedures which we cannot overlook in understanding the substantial analogies in descriptions of the boundaries and their creation. Writing shaped a basic framework that could be adapted to different circumstances, and this created the premise for the formalisation of the border and ultimately for its institutional legitimisation. Carved border documents, and even more their publication in multiple places, made up for the function of a land register, in as much as it granted a confirmation that was officially ratified by display in a public place. In some cases writing was the conclusion of a long phase in which knowledge of the border had been entrusted to the experience of the inhabitants and to the memory of the elders, according to oral tradition which shaped a sort of popular geography that was transmitted from generation to generation. In this perspective we should understand the epigraphic dossier on the border of Perrhebian Gonnoi.38 When the decision was taken to reconstruct and preserve in written record the border of this city, it was necessary to call upon the experience of the shepherds, who used to lead their flocks to pasture in the borderlands of the territory, and the memory of the elders:

Menippus testifies... «I herded the flocks in the temenos of Apollo and at the contended places.... And I heard the elders say that the land in Porthnaieus belonged to Kallias and Philombrotos, citizens of Gonnoi, who had farmed it and used it as pasture until the war led by Porthnaieus».

Writing replaced the spoken word and oral transmission shifted into written tradition along with a process that changed the boundary from a practice of life into a formalised institution. Setting boundaries generated a technology, which is evidenced in Pollux’s nomenclature and which not only concerns the structure of the border but also refers to how the boundary line must be signalled, the means of tracing it in the ground, for measuring distances, choosing the geographical elements used as reference marks and illustrating where to erect the horoi. This process activated the specific judicial proceeding of arbitration, to provide peaceful and consensual solutions to boundary disputes. It also institutionalised the procedure of demarcation. The key officer was the horistes (ὁριστής), who was appointed to set boundaries.39 The political, cultural and religious importance of the action of “marking out the boundary” is well documented in the Roman world, where the task of fines regere is

39 The charge is called ἀρχή in Anecd. Bekk. 1: 287.
specifically attributed to the *rex.* The direction follows a straight line (*ἐπεὐθείας*), as instructed in Greek demarcations. The king is the ruler, but also the religious and moral authority who traces the “straight” path to be followed. Thus he sets the material and metaphorical rule that orders space and the community inhabiting it, separating the inside ordered by civic and sacral laws, from the outside left at the mercy of disorder. In this sense transcending the border of the mother-city meant going into a threatening, hostile world that offered no protection. The boundary line itself took on a strong sacral significance and crossing it was a religious violation. It is in this light that we must see the rites of border crossing (*diabateria*) celebrated by Spartan kings at the edge of Laconia whenever they set out to leave the country at the head of a military expedition.

On the whole the probative tools to decide, measure, trace, control, preserve and write the boundary attest the institutional formalisation aimed at qualifying territoriality within the system of the *polis* and its relations with the outside.

4 Living in the Borderland

In the majority of situations in Greece, the territories of two contiguous cities did not physically touch but rather they opened onto a space that constituted a sort of extra-territorial strip. The lexicon made a semantic distinction in order to qualify this middle-land as *methorion, en methoriois* (between the boundaries), and as *chora eremos* (no man’s land) which referred to the natural and anthropic environment, a wild landscape with rarefied population concentration. Ecologically, border landscapes made no difference between inside and outside, creating homogeneous spaces, where the farmland became areas of brushland and woods that from the *hyporeia*, the foothills, went up towards the hills encircling the central plains.

Specific aspects of the borderland were discontinuity, distance and fluidity. There was the perception that the edge differed from the core for its landscape and in the means of land exploitation. The *Suda* lexicon summarised the activities in the definition *erga tes hyles*. These “woodland activities” pointed to a system of skilled works that we can relate to a true woodland-economy having

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its privileged space in the borderland. It was the open space where the regime of subsistence based on pasturing, hunting, gathering of spontaneous fruits, fishery from marshes and rivers, required undivided land and free passage, unlike the core plain where enclosures and farming prevailed.\textsuperscript{44} Separating the wood and pasture economy from the agricultural economy, the frontier marked the difference between a society of herders and one of farmers.

A border culture took shape across the frontiers, expressing ways of life and forms of meaning that were often the combination or the sum of the cultures of the borderland inhabitants. Yet they could be characterised by, if not dependent on, two or more poleic cultures which framed the borders. For all these reasons border cultures were different from the ones at the core, they were shared by border people who developed a sense of proper belonging, though they were members of separate states. It is not wrong to believe that border culture bound people together, as well as dividing them. These aspects of hybridity and contamination set the borderland as a world apart, at the same time a “space of meaning making and meaning breaking”\textsuperscript{45}. As a socio-cultural system it was a living reality distinguished by an inner coherence and unity, strong identity and consciousness of local togetherness. Thus the borderland could emphasise the sense of social separation and otherness. The control of the central authority was manifest at moments and in places in which steady forms of patrol of the borderland were instituted and entrusted to officers, such as the board of guardians of the marshes at the Erythrai border, or the eponymous magistrate in Thetonion (Thessaly), or to units of armed guards, as at the foothills of Parnassus and in Acarnania.\textsuperscript{46} The borderland, likewise, could offer the place for a sort of internal colonisation. In this sense we should understand the two hundred fighting-men (ἄνδρας δικατίος ἀξιομάχος ἐπιϝοίκος) settled at the edge of one Locrian city, or the Cretan mercenaries in the district of Hybandis at the frontier with Miletus, or the craftsmen who had immigrated into the borderland of Telmessos.\textsuperscript{47}

\textsuperscript{44} Suda s.v. Ψηληροί. Within the context of the frontier economy, marshes and marshlands were places of primary importance. The edict by Alexander on the frontier dispute between the city of Philippi and the Thracians, among other measures, disciplines the use of a marsh. Cf. \textit{seg} 34, 664, II. 12–13.

\textsuperscript{45} For theoretical discussion see Donnan, and Wilson 1999, 64–67; Viazzo 2007, 21–44.


This range of situations gave the border a fluid configuration: experiences of life, and social and political roles and status, did not contribute definitive achievements, the frontiers became negotiable spaces in the relations between *poleis*, as well as within the *polis* itself, between core and border. All this could challenge the political loyalty of the people dwelling in the borderland, and give life to a cultural landscape which transcended the physical limits of the State and defied the power of State institutions in border regions. Thus, aiming to remove this locational ambiguity, Aristotle’s law above mentioned established allocating two plots of land to each citizen, one at the core and one at the borders:

Where this system is not followed, one set of people are reckless about quarrelling with the neighbouring states, and the other set are too cautious and neglect considerations of honour. Hence some people have a law that the citizens whose land is near the frontier are not to take part in deliberation as to wars against neighbouring states, on the ground that private interest would prevent them from being able to take counsel wisely. This arrangement satisfies equity and justice, and also conduces to greater unanimity in facing border warfare.

The philosopher was well aware that the border could be a destabilising factor or, at least, could generate social solidarities different from and stronger than political membership. It is not known where this law was in force, however we can verify how it served to establish decreasing degrees of citizenship, which were lower at the borderlands. However we must recall that the political-legal status of the inhabitants of the internal frontiers attests to different levels of integration. In democratic Athens the political status of “citizen” did not distinguish between residents of the core or of the border, yet elsewhere the territorial distance from the core came to coincide with a reduction of the juridical capacities of the residents. The *perioikoi* of Laconia, integrated in the economy and ordained in the Spartan army, had no political representation. The liminal areas known as *peraiai* must be understood within the context of the borderland: they were the continental extension of the territories of insular *poleis*, and were linked to them by forms of integration or political and administrative integration.

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49 Arist., *Pol.* 7.10.1330a. On the multiple identities of the inhabitants of the borders, liable of reinforcing or infringing social status and roles, see Donnan, and Wilson 1999, 44–59 (with an extensive discussion of the state of the art and related bibliography) and Rokkan 2002, 153–160. See supra n. 20.
dependence, more or less binding. More commonly attested to, no earlier than the 3rd and 2nd centuries BC, in the eastern regions of the Aegean, the *peraiai* represented a sort of bridgehead between insularity and territoriality, and were often the subject of territorial claims leading to conflictual situations with the neighbouring *poleis*; a case in point is the border conflict between Samos and Priene along the Samian *peraia*.

Laying *en methorioi* (between the boundaries) and being *chora eremos* (no man's land) are conditions that do not suffice to make one think of generic space. The local toponymy shows how the borders were deeply joined to a natural and social habitat. It was the geography, the ecosystem and the forms of land exploitation to give a name to the districts, like Broom-field and Oak-Grove between Orchomenus and Methydrion, or Oak-place between Samos and Priene, Annaios Woods and Vineyard at the border of Melitea respectively with Xyniae and Perea. I cannot but refer to districts that, in the course of time, both provided the occasion for spontaneous relations of friendship and were factors of instability. As study cases I may mention the regions that stood as the fluid boundary lands of Sparta with Arcadia, Tegea, Messenia, or Argos, such as the region of Skiritis, the districts of Belbinas and Aigytis, the region Denthaloi and Karyai, Cynuria. Moreover, we may mention Batineatides which was contested between Samos and Priene, and Hybandis between Miletus and Magnesia, and Chonnea disputed between the Locrian cities of Thronion and Skarphea. Nevertheless it is worth recalling that social, juridical and political status of the borderlands and their inhabitants could change as the result of political or military events. This was the case of the farming community inhabiting the lands on the Cephissus river, between Boeotia and Phocis (*παραποταμία γῆ*), which was relocated to the urban settlement of Parapotamioi on a nearby hill, to serve as a garrison for the Phocian-Boeotian frontier.

Interest in exploiting woodland resources compelled the *poleis* to making agreements in order to subject these middle-lands (altogether or partly) to a regime of shared use (*koinai chorai*). At the frontiers, markets were held,

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53 *Schol. in Dem.* 19.73b; *FGrHist* 115 F 385. See Daverio Rocchi 2011b, 51–60.
mentioned by Demosthenes as an Athenian custom of the past, and defined in the Pollux’s border lexicon:

there in old times borderers of our own and neighbouring countries used to gather; and so he speaks of a «frontier-market».54

These border markets provided places of exchange open to all, because they lay out in freely accessible areas across the frontiers.

Overall, two kinds of spaces interacted on the frontier, the geographical one and the socio-cultural one, in a continuous reciprocity of aims and outcomes.55

Frontiers were contested places. The epigraphically attested arbitrations explicitly testify to conflictual situations, which may be considered in fact endemic in some regions. They often provided peaceful answers to disputes that had been resolved by armed conflict in the past. In a close-knit polycentric context it was nearly inevitable that the need for land would urge social and economic pressure on the borders, making some liminal areas the goal of claims and projects of annexation. If the centrifugal movements coincided with processes of anthropization of the frontiers, the pressure on the borders was bound to grow and private profit could conflict with collective interests. Following the arrival of new settlers on the borderland, deforestation became more intense and specialized cultures such as viticulture developed, that were more profitable than woodland economy. However we should be aware that frontier wars were particular phenomena. They were localised in space and circumstantiated in their causes, since they did not involve—or did so limitedly—the relations between poleis.56 Having won over the Argives, the Spartan king Polydorus is said to have replied to those encouraging him to conquer the city.57

To my mind it is honourable, when fighting on even terms, to conquer our opponents, but, after having fought to settle the boundaries of the country (τὸ δ’ ὑπὲρ τῶν ὅρων τῆς χώρας μεμαχημένον), to desire to capture the city I do not regard as just.

54 Dem. 23.37–41; Poll., Onom. 9.8.
57 Plut., Ap. Lac. 63 = Mor. 231 E. This conflict between Argos and Sparta should date back to ca. 8th century BC.
With regard to the centuries-long dispute between Sparta and Argos over possession of Cynuria, the Argives proposed (420 BC) stipulating a fifty-year peace treaty and, during that period, submitting the issue to specific modes of resolution by which frontier conflicts are explicitly differentiated from warfare:58

either Lacedaemon or Argos, provided that neither city were suffering at the time from war (πόλεμος) or plague, might challenge the other to fight (διαμάχεσθαι) for the disputed territory […] but the conquered party was not to be pursued over their own border.

The obligations pending over the eremía could grant to some borderlands the special status of sacred land, on account of being consecrated to a god: sacredness sanctioned their inviolability, forbidding any change in the original condition of the ground, and thus preserving it from changes in its exploitation. Particularly it was contrary to the character of sacred land to induce any change resulting from human activity, therefore even introducing cultivation. Epigraphic documents from Delphi bear evidence that the recurrent profanation of marginal areas of Apollo’s sacred land, i.e. the hiera chora, by neighbouring cities, Amphissa in primis, legitimated recurrent armed interventions to re-establish the original sacral conditions, and it fuelled a centuries-old production of arbitral solutions from the Classical to the Roman Age which were the legal and peaceful answer to a contention never fully resolved.59 Violating land consecrated to the Eleusinian goddesses at the border between Athens and Megara, the so called hiera orgas, caused, according to tradition, the Spartan king Cleomenes’ madness, whereas the Megarians paid by having their ships banned from all the Delian League harbours for the affront of having put a part of those lands to cultivation.60

Memory of claims over contested borderlands was preserved through the creation of frontier myths. Annexing of liminal territories resulted from victories in agonal fights, which had to undergo to specific regulations. This was the above mentioned case of the contention for possession of Cynuria, entrusted to champions of equal physical prowess who were legitimated to represent their parties on account of their dynastic titles, the nobility of their lineage, or their authoritativeness, and who would, by their victory, earn their

58 Thuc. 5.41.2–3.
59 On this issue see Rousset 2002; Daverio Rocchi 2011c, 61–70.
60 Paus. 3.4.2; Thuc. 1.139.2 cum schol.; Plut., Per. 30.2. Lexicographers define ὀργάς any region of woods, mountains and marshes: Phot., Harp., Suda s.v. ὀργάς.
countrymen’s right to possess the contended territory. Over the annexing of Oinoe and Panattus the respective rulers of Athens and Thebes faced each other in a monomachy.\textsuperscript{61} In Artemis’ sanctuary in Amarynthos, Strabo read the inscription recording the agreement establishing the rules which Chalcidians and Eretrians were to comply with, to resolve the dispute over possession of the Lelantine plain, and Archilocus sang of this battle and the fighting Lords of Euboea, renowned for their spears (δεσπόται Εύβοιης δουρικλυτοί).\textsuperscript{62}

In this way a narrative of the frontier took shape, with its own places, protagonists and themes. The city preserved memory of this as a part of the ritual heritage that commemorated the most remarkable moments of the process of territorialisation which was at the basis of the history of its origins, and thus also the battles gained a ritual character. Periodical ceremonies included these agonal fights within the festivals of the polis so that they continued to play a greatly significant role in legitimising and validating the possession and in elaborating the memory of its origins. Border and frontier narratives were indispensable elements for constructing national cultures, and ultimately they can be considered among the factors promoting civic identity. The liminal position and its function as a space subject to ritual battles made the border the privileged space for agonal fights that do not comply with ordinary warfare situations. Pausanias, for example, reckons that at the border between Megaris and Corinthia the duel between Hyllus, son of Hercules, and the Arcadian Echemus had taken place over supremacy in the Peloponnese.\textsuperscript{63} These myths preserved the memory of the changes in territorial assets and provided authoritative sources for different forms of domain based on the continuity of possession, on the right of conquest and on autochthony.

5 Between Ubiquitousness and Hybridity

In conclusion, the borders of the poleis covered a variety of situations that do not allow any univocal and selective definition. Rather they belong to a discourse of ubiquitousness and hybridity, practical use of places, and subjective perception of mental spaces, according to which liminality is open to being experienced as integration and assimilation, as well as distinction and separation. Overall this is a discourse of co-evolution. These situations can be referred

\textsuperscript{61} Main source: FGrHist 4 F 125. See also FGrHist 70 F 22; Polyaenus, Strat. 1.19.
\textsuperscript{62} Strab. 10.1.12; Archil. F 3 West; cf. Plut., Thes. 5.3.
\textsuperscript{63} Paus. 1.44.10.
to main categories distinguished by Donnan and Wilson. The legal boundary line, on the one hand, demarcated the space under public control, circumscribing areas of different jurisdictions, but on the other hand, it was the interplay in neighbourly relations. According to these authors, it acted ubiquitously as a device for opening or closure, as a sign of the sovereignty of the state, and also as a marker of the peaceful or hostile relations between poleis. The borderland was a territorial zone stretching across, and away from, the state borders, within which people negotiated differing behaviour and meanings, promoting a sequence of interactions. To these authors’ categories I would add the border as ritual space to which the history of polis foundation and of the process of territorialisation is traced back to.

These multiple experiences generated in frontier localities require a multifaceted analysis of the relationship between the core and the border, taking into account the discontinuity, imposed by differences in the natural and anthropic landscape, in land occupation and exploitation, in the juridical status of the territory, in control by the political power, in the character of relations with neighbouring settlements. We must nonetheless understand that in the practice of interpersonal and interstate relations there was no rigid contraposition between boundaries and borderlands nor in their functions, but rather there were mixed situations, where difference and homogeneity merged and influenced each other, distinction and integration interacted in a contamination of forms and functions that were reshaped by contingent aims and circumstances. So what comes to light is the real and symbolic value of the border in collective life, as a device for establishing identity. Nevertheless we cannot but see in the borders the “good reasons adduced to justify or legitimise the social, ethical, political, and economic consequences of distinctions introduced in the co-existence among individuals and among collective subjects”.

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64 Donnan, and Wilson 1999, 43–62.
We can justifiably claim that Alexander the Great not only in actual fact turned the world upside-down but also revolutionised the Greeks’ view and conception of the world. Afterwards much had changed. Above all, Alexander’s truly unbelievable campaign of conquest brought about a precise knowledge of great parts of the world, from the Near East to India. This affected the Greek conceptual horizon. The world that the Greeks had in mind simply grew. In a certain way it now received a tangible shape. The enormous effect that this had on the geographical imagination of the Greeks was perfectly clear not least to Eratosthenes, one of the leading geographers. However, this was not only a side effect, so to speak, of the military procedure and the conquests themselves. It was also owed to the planning and actions of Alexander. For a part of his campaigns was dedicated to geographical explorations. While he did not intend the revolution just mentioned, he nevertheless initiated and consolidated it. It was thus not a matter of mere chance, even though the concrete scientific elaboration still needed to be accomplished. Nevertheless, the campaign of conquest and the explorations had provided it with a new foundation. Regarding Asia, Polybius (3.59.3) clearly marked this fact. Above all, the proportions between theoretical explanation and empirical investigation changed. The consider-

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1 The observations and considerations presented here are based on Gehrke 2011. In many regards they are closely related to the important article by Geus 2003. In the treatment of Alexander from this point of view, besides the commentaries by Hamilton 1969 and Bosworth 1980, 1995, the following have proven particularly useful: Endres 1924; Ehrenberg 1965; Schachermeyr 1973 (esp. 87ff., 337ff., 396ff., 442ff., 466ff., 654ff.); Karttunen 1997; Lauffer 1981 (esp. 116, 121, 140, 150, 157, 177, 182ff.); Bosworth 1996 and Lane Fox 2004 (esp. 436ff., 447ff.). On Alexander in India compare also the collection by Hahn 2000, my position regarding Alexander in general I have explained elsewhere (Gehrke 2013). Many suggestions and ideas are owed to the collaboration with Veronica Bucciantini, an outstanding expert on Nearchus and his geographical-literary background.

2 Strab. 1.2.1; 3.2.

3 On this and conceivable implications see now Bianchetti 2012a, 307ff.
able role played by Alexander himself in this development will be focused upon in the following.

How did the Greeks conceive of the world before Alexander? We could begin with a paradox, namely with the observation that the Greeks had already conquered the world two hundred years prior to the Macedonian king. This had come about not in a concrete sense, through war and power politics, but with the weapons of the intellect. The Greeks, or more precisely the Greek intellectuals, had grasped it theoretically and conceptually. In this endeavour, as in many others, they had profited from the wisdom of the Orient, where the entire world had been envisaged as dominion in accordance with the ideology of the empire. Numerous kings had even initiated the exploration of previously unknown regions and had mapped the entire world in symbolic form.

The Greeks, too, gazed upon an entire world. But in their case it was not the kings, but sages and philosophers, natural scientists and mathematicians, and their numbers were limited. The principles by which they ordered the world and expressed their worldview were those of geometry, which by the way they left us under the name of “Euclidean geometry”. The world, and indeed the whole world, was thus put onto one map; it became literally surveyable, at least mentally. The first to take this also truly revolutionary step in the 6th century was Anaximander of Miletus. Hecataeus, also from Miletus and already respected as the former’s student in antiquity, filled out his entirely schematic and circular map shortly afterwards. He added numerous empirically identified names. In this manner, he put seas, mountains, rivers, tribes and more in a geographical order. It is thus possible to speak of an Ionian cartography. In laying out such maps, which were explained by attached texts, reports about voyages of discovery organised by Oriental rulers were also used. Particularly famous was the journey from the Indus to the Persian Gulf undertaken by the Carian Scylax on the order of the Persian Great King Darius I at the end of the 6th century.4

The development of the geographical knowledge and its philosophical-mathematical conceptualisation was dramatic. Soon the sphericity of the earth was postulated, and there were continuous attempts to record the known parts of the “inhabited” areas of this sphere, the oikoumene, always on a geometrical basis and with recourse to practical knowledge. The research (which, by the way, was called historie) was based on results investigated by the researcher himself or derived from other informants, the more reliable the better. Personal inspection and hearsay (opsis and akoe) were key terms. The explorers and scholars always had the whole world or rather its inhabited part in

4 On this and the following see Gehrke 1998, 2007.
mind. However, they imagined it as a plane (regardless of its spherical shape), thus in the second dimension. Here the unambiguous rules of the continuously developing and elaborated geometry prevailed, accordingly symbolic figures were added to the maps. Work was restricted to whatever was mathematically manageable.

In principle, this was no different to the procedure used in those times to set up new settlements and distribute farmland. Thus geometry was the measuring (metrein) of both “land” but also of the “earth” (ge). This geometry gave the orientation: it provided the frame, which was an overall frame. In this way, the Greek thinkers laid the foundation of modern scientific geometry, at least theoretically. For here, too, the abundance of empirical field observations is ordered and mapped according to the rules of mathematics, whereby the explorations go ever further, the measurements become ever more precise and the mathematical rules are ever more refined—by now far beyond the achievements of antiquity. However, the main principle was the same. The grid covering our globe symbolises this correspondence and connection until today.

Nevertheless, this view of the entire world was at first extremely schematic, due to its geometrical and cartographical character. As mentioned briefly before, those figures that could be used correctly in terms of mathematics dominated: straight lines and rectangles, triangles and circles, at most trapezia and similar figures. At times, metaphors were employed (for instance in the shape of a leaf or another object), but if a precise construction was aimed for, the figures mentioned were necessary. Furthermore, this view was limited from a sociological perspective. It existed merely in the very small and elitist circles of intellectuals.

The majority of people in Greece (and this held and still holds true no differently for comparable cultures) oriented themselves with the help of roads and routes as well as distinctive points, which served as landmarks. This perception of space, which apparently can be represented and thus memorised particularly well in the human brain, was linear and one-dimensional. Today this is called a hodological perspective. According to this perspective, space was lived in and movement mentally accomplished within it, albeit in a very concrete manner. The localisations were relational, always referring to the observer or subject of the movement. Thus, in this sense a place or object was located “in front of” or “behind”, “above” or “below” etc. Distances were usually stated in terms of the time needed to cover them, such as days journeyed. The practical knowledge that travellers, merchants, seamen etc. derived from their experiences was structured according to these principles, and integrated in turn by the intellectuals into their perspective. Due to the great importance of maritime communications a first geographical ordering scheme developed,
which tracked coastal navigation, the “sailing around” (*periplus*); merely mentally, but still related to concrete travelling. This everyday and thus “normal” perception of space—Klaus Geus calls it *common sense geography*—was separated from the abstract and two-dimensional perspective of the philosophers by a deep gap. Their view was simply incomprehensible to the “laymen”.

Very characteristically, this discrepancy was both noticed and made subject of discussions very early on. A passage taken from the comedy *The Clouds* (200–218), written by the Attic poet Aristophanes and performed in 423 BC, may illustrate this very briefly. Its main character, Strepsiades, is presented as a very typical common citizen. Burdened by debt, he hopes that an instruction in rhetorical trickery will release him from his troubles. Thus, he enters Socrates’ “Think Tank” (*phrontisterion*), where various kinds of intellectual-philosophical activities are practised.

In this context, one of Socrates’ students attempts to introduce Strepsiades to geometry. The latter associates with this term the land survey, the practical and frequently occurring activity of “measuring the earth”. He very specifically has in mind the distribution of land among needy Athenians. When the student explains to him that geometry deals with “the entire earth”, Strepsiades continues on this line of interpretation. He thinks of a distribution of the entire world among the Athenians, and thus of the economic consequences of an Attic world domination. For this reason he calls the geometrical method in this global sense—and a funny criticism of Athenian imperialism is hidden here—“beneficial to the people” and “useful”. In order to give Strepsiades a correct understanding of this intellectual geometry, the student then shows him a map of the earth. However, upon seeing this map Strepsiades immediately shows that he does not understand it at all. He is not able to read maps, but considers them in a concrete manner, like a child. When lastly he notices how close to each other Athens and Sparta are situated on the map, he even urges the student to place them further apart, as both were in a state of war. Naturally, this is cartographically impossible, whereupon the “common citizen” reacts aggressively.

In the 6th and 5th centuries, therefore, the sense of space among the Greeks was dominated by a fundamental distinction between theory and practice, which was clearly perceived as such by the philosophically educated. This continued to exist, and understandably so, since this is observable in other cultures, too. For it depended very heavily on how widespread education in philosophy and *historie* was and is (the same still applies today: a mental map,
functioning two-dimensionally and cartographically, we learn only by specific instruction, for instance in school).

After these fundamental remarks on the nature of spatial vision(s), we can now turn to Alexander. Let us ask how he saw and perceived of the world. Did he hold on to the general hodological orientation, which he surely got to know as part of his elementary education, or had he also acquired the intellectual, two-dimensional view of “the whole world” during his further course of education, naturally in accordance with his time and based on the then achieved state of development of geometry and the empirical information about the world? This question is by no means trivial, for the idea of conquering the entire world or reaching its ends determined his actions, if not from the start, at least from some point of time. For this reason it is important to know whether this leading idea was stimulated or predetermined by a particular view of the world. Did he perhaps even follow the ideas of philosophers and intellectuals in his actions, thus on his part closing the gap between theory and practice, an ancient Columbus? Even with a sceptical attitude towards this question, a genuine historical interpretation needs to take care to base any analysis of the plans of the respective agent on his perception of the world rather than on our modern one, orientated according to the modern atlas. It is thus the aim of this contribution to reconstruct Alexander’s mental map.

The questions just raised can be put into more concrete terms as follows. How did Alexander see his world, through the eyes of a Macedonian warrior and Greek peasant—there is no significant difference between them here—or through those of a Greek intellectual? How did this worldview affect his plans and actions? Did he create references to this world conception as he was progressing and modify them accordingly? And above all: what significance did his advance to the ends of the earth have against this background? Perhaps there are some who think that these questions go too far. However, there is in fact a fair amount of material to aid in finding the answers. Alexander’s contemporaries already, especially his closest companions and confidants, wondered about his motives and intentions. Some of their observations and contemplations have come down to us in our consistently later sources as part of the complex traditions about the king. In modern academic research, too, particular attention has been dedicated to such problems. Besides, we generally dispose of a wealth of information about geographical conditions and perceptions, not least due to the reports of Alexander’s campaign itself. Therefore, the attempt to see the world through the eyes of Alexander is not necessarily doomed to fail from the start.

The questions raised here can be focused on precisely that point that we already mentioned, namely the education or intellectual formation. For
Alexander, this means asking whether during the course of his upbringing and education he was acquainted with the geometrical-cartographical image of the world just sketched. This question can hardly be answered directly, as particularly the reports on Alexander's youth and education have been heavily embellished. Many elements and aspects were even projected back into the early times later on. Among these later additions can surely be counted also the tradition relating that already at a young age Alexander was interested in the geography of the Persian Empire (Plut., Alex. 5.1ff.).

The pretty story of Alexander's conversation with his geometry-teacher Menaechmus (Stob., Flor. 4.205 Nr. 115), too, is rather suspicious regarding its focus. On Alexander's question concerning the exact subject of geometry, the teacher replies that elsewhere two routes existed, among them a quicker one for kings (the “Königsweg”), except in geometry, where there was only a single one. One the one hand, this gives the strong impression that here the difference between the young, practically orientated and hasty ruler and the highly intellectual scholar was particularly emphasised, as was prone to happen with Alexander (one might think of the Gordian Knot). On the other hand, it is possible that this accentuation hides a core of historical truth, namely the fact that Alexander had a teacher in mathematics at all. And this teacher, Menaechmus, was after all a student of Eudoxus of Cnidus and a friend of Plato, who later on was accused of having been too concrete. This is per se not implausible and thus we can indeed take Alexander's instruction in geometry as a fact.

But we do not at all rely on such speculations. For there is no need to doubt that Alexander's intellectual education by all means complied with or resembled the curriculum of an upper class Greek. In this the familiarity with the epics of Homer was traditionally of great importance. It is securely attested that Alexander was strongly influenced by the study and knowledge of Homer, especially of the Iliad. It should even be considered a key to understanding his personality. However, Homer was the teacher for the Greeks on nearly all matters in life—Plato claims directly that he had “educated Greece" (Resp. 10.606e). Later on, he was thought of as the founder of geography and one of the most important representatives of this “discipline". His works were used in the education of geography, at least concerning the Greek motherland. The catalogue of ships in the second book of the Iliad with its linear arrangement of Greek cities and tribes according to the periplus-scheme offered a clear and easily memorable orientation. It is quite certain that the Macedonian boy became aware of and was able to imagine the world of the Greeks for the first time in this manner—still very much on the basis of the elementary hodological point of view.
We can gain even further insights when we consider that Alexander’s intellectual education during a particularly formative period in his life, namely from ages 14 to 17, was entrusted to the philosopher Aristotle. This constellation of teacher and student inspired a vast amount of associations. Being a very attractive topic—the great man of the mind educated the great man of action—it was embellished already in antiquity into a near-legendary tale; invented letters and pieces of advice illustrated and "documented" it. More recent research, too, has sometimes indulged in speculation. Any attempt to reconstruct what Alexander learned from his master needs to keep in mind the aim of the instruction (in other words, the philosopher’s “educational mission”) and focus on those aspects that for good reasons can be assumed to have been the educational objects of the Greek elite. We are talking about the education of a future king and Macedonian aristocrats who would become the functioning elite of a new and powerful Macedonia; and all these were to be formed according to the refined Greek manner.

It is thus very unlikely that Aristotle introduced the prince to the deepest depths of his logic and metaphysics (however far these had developed at the time). This complied neither with the aim of the instruction nor with the age of his pupil. But it is both well attested and plausible that they read the Homeric epics and a number of other pieces of Greek literature. Considering the intensity of Alexander’s references to Xerxes’ campaign during his transition to Asia (Instinsky 1949), the conclusion that Alexander knew the work of Herodotus, cannot be avoided. If this was the case, then he was also already familiar with the outlines of the geometrical conception of the world, albeit with a basic attitude of scepticism regarding cartography. For both characterise Herodotus’ Histories.

Besides, the assumption that Alexander's instruction by Aristotle also included geographical issues and that maps of the earth played a role in this can be justified: In one of his works, which was particularly dedicated to the practical horizon of life, namely in the Rhetorica (1.4.1360a 33–35), Aristotle emphasises the utility of “earth maps” (by the way, he here uses the same word that is also offered by this passage of the Clouds mentioned above and that was used elsewhere, too, in this sense, ges periodos).6 This concerns legislation, a fundamental part of political action, to which also Aristotle paid special attention. This could indeed fit the educational mission. To justify this utility, Aristotle claims that it was possible to learn something about the tribes’

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6 Regarding its significance see e.g. Romm 1992, 28: “It stands for ‘depiction of the earth’s perimeter’ in either visual or verbal terms, or perhaps in both at once.” It should be noted that here, too, the connection to the path (hodos) still exists.
customs in this way. This in turn shows that the maps of the earth were always accompanied by a text, something along the lines of an explanatory key, just as we need to assume also for the work of the founder of this genre, Hecataeus, who has already been mentioned. But usually also the map was included.

We do not need to assume that Aristotle had those boards of maps with him in Macedonia that later belonged to the equipment of his Peripatos, his school in Athens (Diog. Laert. 5.51). It is easily imaginable that the teacher sketched the maps’ relatively clear geometrical figures and lines into the sand in order to illustrate his lessons, as was generally practiced in geometry. We have a basic idea of those sketches, for Aristotle’s worldview conformed closely to that of the Greek intellectuals, which was briefly outlined above. This needs to be assumed in any case in consideration of his methods of education. Furthermore, his works also tell us the same. Even though he did not dedicate a separate paper directly to geography or cartography, he nevertheless still dealt with objects that were of fundamental importance also for geography.

Especially important in this context are his works *On the Sky* and *Meteorology* (*Meteorologica*), dealing with phenomena in the astronomical and sublunar area. Astronomy, as discussed in his work on the sky, and geography were anyway closely connected and related to each other in Greek geography. Besides, the *Meteorologica* deal with important geographical topics, with climate and weather, with the characteristics of the various continents and earthquakes. To those works could be added a book attributed to Aristotle on the flooding of the Nile, of which a Latin extract exists. These works show clearly that Aristotle was familiar with geographical literature, among them reports of investigations of the earth such as that by the already mentioned Scylax. He is even mentioned explicitly by Aristotle in his work on politics (*Pol*. 7.14.1332b 24). Above all, the geometrical-cartographical character of his conception of the world becomes clear in the works named. Although probably a coincidence, it is nevertheless interesting that this becomes particularly evident in two passages that are especially important also for Alexander.

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7 On these works see now Flashar 2013, 266–296.  
8 F 248 2 Rose (= *FGrHist* 646 F 1) and now see also the new edition by Bonneau 1971. According to Jacobi and Luppe 2000 the Aristotelean wording is contained in *POxy*. 4458, while Fowler 2000 sees in this a text by Posidonius, which—possibly only indirectly, namely through Eratosthenes—refers to a book on the flooding of the Nile attributed to Aristotle. If the work is not Aristotelean, therefore, it is still closely related in time and subject. Further on this discussion in P. Cappelletto on *FGrHist* v 2032 A 14. 16 (http://referenceworks.brillonline.com/entries/fragmente-der-griechischen-historiker-v/ nikagoras-von-kypros-2032-a2032).
In the work on the flooding of the Nile, a virtually classical problem of ancient geography, Aristotle (or the author of the book who is both thematically and temporally very close to him) examines older explanations. One of them claims that the Nile was flowing from the “Red Sea” (which is not necessarily identical with “our” Red Sea, since in antiquity it was for a long time identified or confused with the Persian Gulf or the Western part of the Indian Ocean), considering it the continuation of some Indian river housing crocodiles. In this context the author remarks that it was uncertain whether the mentioned Red Sea was connected with the big surrounding sea (namely, the oceanus), or not. If the Nile was the continuation of one of the Indian rivers, or more specifically of the Indus River, the Red Sea naturally needed to be an inland sea. The question remains expressly open at this point (*nullum enim audivimus dignum fide nondum de rubro mari, utrum ipsum per se ipsum est aut contingitur ad id quod extra Eracleas columnas*).⁹

In contrast, in the *Meteorologica* it is claimed that the “Red Sea” was connected, but only barely (*kata mikron*), with the sea outside the Pillars, while the Hycanian and the Caspian Seas were separated from it (*Mete. 2.1.354a 1ff.*). All this is based on the Greek scholars’ classical perception of the world. It is aware of the “Inner” Sea, meaning the sea within the Pillars of Hercules (Strait of Gibraltar), thus the Mediterranean Sea, and the “Great” or “Outer Sea”, the oceanus or ocean, surrounding the inhabited world. It is drawn into this in the form of indentations and was in turn connected to the “Inner Sea” by the Pillars of Hercules. The indentations just named, such as the mentioned “Red Sea” or the Caspian Sea, were subject of lively debates, precisely because it was unclear whether they were really connected to the oceanus or not.

How schematic and constructed this worldview was becomes evident in a different passage of the *Meteorologica*. It deals with the theory that the most important rivers originate in the most important mountain ranges (*1.350a 15ff*). In Asia, it is claimed, most and the greatest rivers flowed from the *Parnassos*, which all agreed was the biggest mountain range in north-eastern direction. This mountain range, called here—virtually folk-etymologically—by a name familiar in Greece, is the *Paropamisos* (today’s Hindu Kush). In crossing this mountain range, Aristotle continues, one could see the “Outer Sea”. This remark is very revealing for this worldview’s character. It is evident that this idea originated so to speak at the desk. It was based on the perspective just described, according to which it was assumed that behind the Hindu Kush

⁹ On the related question regarding the relationship between Indus and Nile and the closeness of India and Ethiopia see above all Schneider 2004 and now Bianchetti 2009b, 119–124 (with further bibliography).
the world was soon coming to an end, and that thus the oceanus needed to be located there. Therefore it accordingly needed to be visible from the next peak of some height.

We can thus, from what has been said, proceed from the assumption that Aristotle in Macedonia taught his students, among other things, geographical contents, as well as visually sketching them. Those thus obtained an overview of the entire world and its seas in clear, easily memorable and simultaneously suggestive images. It is doubtful that this image was particularly concrete or precise, for this schematic and straight-lined perspective of the whole earth was not made this way. The very aspects we associate with maps, precision and a concrete sense of space, were precisely not the point. The focus was rather on mental-mathematical clarity and philosophical order. It was used here in the sense of the Greek paideia to convey understanding and knowledge of the world, some of which was also practically useful, as we have seen.

Due to precisely these reasons we may not assume that the master presented his great student the earth in order to develop from this a programme to achieve its factual submission. This would be anachronistic in a double sense. On the one hand, it would imply modern forms of thought for which the idea that practical action needs to be based on theoretical-scientific insights is common. However, in antiquity this field did not deal with acting instructions and blueprints of this kind, already because of the great gap between theory and practice. On the other hand, this would not have fitted the political context in those years, when King Philip, Alexander’s father and Aristotle’s “client”, was still fighting for hegemony in Greece. Grasping for world domination was certainly beyond his imagination. Only in the aftermath this appears conceivable. The testimony of the contemporaries, however, shows that Alexander’s campaign was at first considered absolutely inconceivable. Nevertheless: in the sense just outlined above, roughly and schematically, having been taught by Aristotle, Alexander kept the world as a whole before his eyes and in his mind. And this would be demonstrated during the campaign itself (incidentally confirming the considerations made so far). It then became significant for Alexander’s actions, also in a concrete sense.

Besides these aspects regarding content and didactics, something more was important for the prince’s upbringing in those formative years, namely the motivation and incentive itself. When in our reports on the deeds of Alexander reasons for his behaviour are sought for, certain passages suggest repeatedly that he was stricken by pothos (literally: longing) to do this or that. Usually this is precisely referring to concrete explorations on the borders of the known world and the imitation or outdoing of heroic deeds. Since this word is being used by close partners in conversation and companions of Alexander, such
as the Cretan Nearchus, Victor Ehrenberg (1965) entirely plausibly concluded that Alexander himself used this wording. Fritz Schachermeyr (1973) then in this context made reference to the same wording in the hymn that Aristotle composed on his friend Hermias who had been put to death by the Persians, roughly during the time that he was teaching Alexander. In this hymn the word *pothos* refers to a very elementary orientation towards glory achieved by exceptional deeds, after all by *arete* (virtue), and is associated with great mythical heroes such as Heracles.

Did therefore Aristotle reinforce in his student not only the urge for great heroic deeds but also an ambition to reach the ends of the world? Did the king himself use the term *pothos* to describe this desire? Did thus both, the impulse to achieve Herculean deeds and to search for the ends of the earth come from an “emotional desire for conquest and exploration of the unknown world”?\(^\text{10}\) Some may consider this speculation. But it is unlikely to be considered implausible that the philosopher, being familiar with the “strive for knowledge” as a human incentive only too well,\(^\text{11}\) equipped his royal student with a great deal of scientific urge and that he did not only teach him knowledge, but also curiosity for it, literally thirst for knowledge.

In order to advance in solving this problem, the following effective method presents itself: We can examine the actions of Alexander himself in order to thereby reach conclusions regarding his motives and their backgrounds. For his actions themselves are quite revealing. By performing various ritual actions, Alexander already charged the actual beginning of his expedition against the Persian Great King, namely the transition from Europe to Asia at the Hellespont, with symbolic significance.\(^\text{12}\) Before setting over, he thus sacrificed to the hero Protesilaus, the first among the Greeks to have fallen during the battle for Troy. During the crossing, he offered a libation to Poseidon, poured from a golden bowl; in a similar way and in a similar location the Persian Great King Xerxes, crossing from Asia to Europe, had honoured the sun god nearly 150 years previously from the middle of his bridge of ships made especially for this occasion.

This reference presented itself easily, since the revenge for the destruction of sanctuaries connected with the campaign of Xerxes was an official reason for Alexander's aggression. But the reminiscence of the Trojan War goes further. In this manner, the present campaign was evidently made part of a chain of long conflicts, based on a perspective found in Herodotus. It was understood as

\(^{10}\) Ehrenberg 1965, 494.

\(^{11}\) Cf. Arist., *Metaph.* 1.1.980a 21.

\(^{12}\) On this is still important Instinsky 1949.
part of a universal contention between Hellenes and barbarians, localised geographically in Europe and Asia. It is reasonable to assume that for Alexander this was based on a corresponding view of the world, namely the “classical” division of Europe and Asia, whose border at this point was the Hellespont, making up—if still rather roughly—the two-dimensional, flat vision of the *oikoumene*.

The polarity of Europe and Asia and its relation to the universal conflict could also at the same time refer to the idea of world domination. Hans Ulrich Instinsky (1949, 62ff.) already reached this conclusion. The close connection between the perception of the world and the notion of its conquest and the manner in which this was related to his orientation towards glory and heroic achievements is illustrated by a speech of Alexander. According to the tradition he held this speech in front of his officers at the Hyphasis, on the eastern border of the Punjab, in order to convince them to proceed east, to the edges of the earth.\footnote{Arr., *Anab.* 5.25.3–26.8; cf. Curt. 9.2.12ff.} Naturally the exact wording is hardly authentic, and it is barely conceivable that Alexander gave his followers lessons in geography. Much is anticipated and thus anachronistic in the situation described. Furthermore, the statements about the Caspian Sea suggest a certainty that Alexander evidently did not possess. However, the words put in his mouth find confirmation in many of his measures and plans (as we shall see later on). The text thus offers an accurate interpretation of his ideas and is in its core certainly based on information derived from persons who—like Nearchus or Ptolemy—communicated with him on these matters. The correlation between achievement orientation, the connection with myth and the idea of geographical borders is particularly characteristic and very much in the spirit of the already mentioned connotation of *pothos*.

Alexander begins with a résumé of matters already achieved (25.3ff.), followed by—framed in remarks on “noble deeds” (*kala erga*, 26.1) that lead to a pleasant life of “virtue” (*arete*) and “immortal glory” (*kleos athanaton*) and with which Heracles has already been surpassed (26.4ff.)—a geographical vision of world domination: “Yet if any one longs to hear what will be the limit of the actual fighting, he should understand that there remains no great stretch of land before us up to the River Ganges and the Eastern Sea. This sea, I assure you, will prove to be joined to the Hyrcanian Sea; for the Great Sea encircles all the land. And it will be for me to show Macedonians and allies alike that the Indian Gulf forms but one stretch of water with the Persian Gulf, and the Hyrcanian Sea with the Indian Gulf. From the Persian Gulf our fleet shall sail round to Libya, as far as the Pillars of Heracles; from the Pillars all the interior
of Libya then becomes ours; just as Asia is in fact becoming ours in its entirety” (Arr., Anab. 5.26.1–2, transl. P.A. Brunt 1983).

The fundamental problem of the worldview demonstrated here was its vagueness and the enormous lack of knowledge. The abstract, manageable and ordered character of the overall picture contrasted radically with the much more complex and literally unsurveynable reality. The traditional hiatus between the theoretical and the practical sense of space occurs here, albeit in a different form. However, Alexander, planning and implementing a military undertaking, was dependent in a specific way on realistic statements and ideas that needed to be as precise as possible. And precisely at this point a highly characteristic combination of theory and practice was achieved which was able to partly overcome the mentioned hiatus, thus at least relativising it. For Alexander continually examined and inspected the map in his mind—very significantly, in this context the sources regularly use the semantic field elenchos, also used to describe the reasonable review of theses and conceptions, for instance in Socratic philosophy. In other words, Alexander constantly compared his vision of the world with reality, at least in the rough outlines that the world view itself dictated.

Thirst for knowledge and a longing for the borders were thus complemented by the planned and concrete investigation of geographical facts. This exploration of the world had an eminently practical side, which had been envisaged from the start in planning the campaign. A group of “pedometers” (bematistai) was part of Alexander’s staff. They recorded in a very concrete manner, namely in a hodological and entirely practical sense and for practical means, the distance covered. The data of these bematists, some among whom, such as Baeton and Diognetus, turned their results into geographical books,14 were of great importance for later geography and thus became part of the scientific measuring of the earth also undertaken by the great scholar Eratosthenes.15 Strabo, too, emphasised Alexander’s great role regarding the knowledge of Punjab (15.1.26). Then again, the two-dimensional view of the world simplified concrete action. Upon noticing the necessity to cross the rivers of Punjab, thus according to his optics imagining them as being located in a right angle to his direction of march, he decided to cross them further north and therefore closer to their sources, where this was more easily achievable (ibid.).

The precise object of the investigations can be derived very clearly from Nearchus’ statements on his tasks during the passage from the mouth of the Indus to the Persian Gulf, namely his instruction containing the following

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14 FGrHist 119–120.
15 Cf. Strab. 11.8.8; 15.2.8; Plin., HN 6.45 and see supra n.1.
mission. He was to “get to know the territory along the sea as well as the
inhabitants, the anchorages, sources of water, and customs of the people and
whether the region was suited to carry fruit or not”. Typically for Alexander,
rather irrational impulses merge with strictly rational considerations, and
accordingly in this case, in a constant process of comparison, the geometrical,
two-dimensional view of the whole world joins its concrete investigation that
is subject to military and political concerns, thus turning the conquest of the
world into an investigation of the world and *vice versa*. With reference to other
Alexander scholars, Victor Ehrenberg strongly emphasised this aspect in the
context of his observations regarding the term *pothos*: “It is probably true to
say that it is in the essence of genius that his irrational powers are governed by
the highest degree of reason and intellectual clarity, and that they are put into
forceful reality. We cannot doubt that it was so with Alexander” (1965, 500).

These connections can be grasped in various areas and places, signifi-
cantly and especially in geographically neuralgic points. Let us begin, based
on the worldview offered in the speech at the Hyphasis mentioned above,
with the northern part of the world, the region surrounding the Caspian Sea.
The rivers Tanais (Don) and Iaxartes (Syr-Darya), often called by the name of
or confused with the Araxes (Aras in Armenia or Amu-Darya), were situated
there. Two connected problems of geography occurred here. On the one hand,
it concerned the question whether the Caspian Sea joined the Outer Sea or
was an inland lake. If the latter was the case, the question arose on the other
hand, whether this Caspian Sea in turn could be identified with the Black Sea
or the Sea of Azov (the Maeotis) or be thought of as connected with these
(the Aral Sea was in any case not identified as such or rather considered the
same as the Caspian Sea). This was not trivial also in a strategic sense. For in
the latter case the identification of the Iaxartes and the Tanais, thus Syr-Darya
and Don, suggested itself. In that case a river connection from Central Asia into
the Black Sea area could be assumed, offering an enormously convenient route
of communication.

Already from Herodotus it was known, and thus also to Alexander, that
the Caspian Sea was an inland lake, bordering in the west on the Caucasus,
in the east and south on a huge plain inhabited or rather controlled by the
Massagetae. Alexander had (or could have) learned the same from Aristotle,
and furthermore that the “Araxes”, that is in this case probably the Iaxartes

16 Arr., *Anab.* 7.20.10 = *FGrHist* 133 F 28.
17 Diod. Sic. 17.73.3; Strab. 11.7.4; Curt. 6.4.18ff.; 7.3.19–21; Plin., *HN* 6.36–40; Plut., *Alex.* 44.1ff.;
(Syr-Darya), had its source in the Hindu Kush, and that the Tanais, originally part of it, separated itself and joined the Sea of Azov. Alexander evidently felt confirmed in this assumption when he reached the Caspian Sea and among other observations found that it was of fresh water. Of course he was confused by differing opinions of scholars who claimed that this was a bay of the oceanus. This notion seems to have won the upper hand for some time, perhaps due to the realisation that also the Indus was not the headwater of the Nile (see infra). In general, however, this issue remained unclear, as is evident not least from the speech just mentioned, which deals with the location of the Tanais (ibid. 25.5).

However, decisive is how Alexander in the end reacted upon this. In spring 323, during the preparations for the expedition to Arabia, he sent out an expedition led by a certain Heraclides in order to explore the Caspian Sea (Arr., Anab. 7.16.1–4). “For he was seized with a longing to discover what other sea is joined by this sea, called both Caspian and Hyrcanian, whether it joins the Euxine, or whether on the east side towards India the Great Sea circling round pours into a gulf, the Hyrcanian, just as he had discovered the Persian Sea or, to use its actual name, the Red Sea, to be only a gulf of the ocean” (Arr., Anab. 7.16.2, transl. P.A. Brunt 1983). This passage makes particularly clear just how great Alexander’s geographical curiosity was and that he—in contrast with the armchair scholars—verified, enlarged and substantiated his worldview by purposeful explorations, by all means also in an eminently practical sense.

For the link with concrete questions in the military and political opening up of the world and thus in the end with its control becomes clear from comparable constellations. It becomes evident in particular where an equally important geographical problem existed, which was analogous to the question regarding the connections between Caspian Sea, Tanais and Iaxartes. A similar question occurred in the south of the world. Was the “Red Sea” or the “Persian Gulf”—both were, as we have seen already, at first usually (at least in part) identified with each other—an inland lake or was it connected to the ocean? And was thus possibly the Indus identical with the Nile, as its headwater? We have seen that Aristotle in his Meteorologica tends towards the opinion that the Red Sea was connected to the ocean, while in the work on the flooding of the Nile attributed to him the issue remains a non liquet. In any case, the opinion on the identity of Nile and Indus was common at the time of Alexander; moreover, it

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19 Mete. 1.13.350a 18ff.; 2.1.354a 1ff.
20 Curt. 6.4.18ff.; Plut., Alex. 44.1ff.; cf. Strab. 11.7.4.
21 In Plut. loc.cit. they are called physikoi andres.
22 Cf. the speech in Arr., Anab. 5.26.1ff.
is possible that it is already lurking behind a mention of “barbarian” peoples in Aeschylus’ *Suppliants*.23

Anyway, Alexander seems to have made similar experiences, achieved due to his own observations—and how important these are also regarding geographical problems had already been emphasised by his teacher not least in the context of the Nile’s flooding (F 246 Rose)—at the Indus as on the Caspian Sea. He found clear indications for a certain geographical view, namely crocodiles in the Indus itself and a certain kind of bean, which he identified with the Egyptian bean, on the Akesines, one of the Indus’ tributaries. In this way, the—eminently practical—idea was born to undertake the return from the east by ship. For this reason, Alexander commanded the building of a fleet, and he did so on the Hydaspes, where he had defeated Porus and founded two cities. Filled with pride because of his discovery of the Nile’s sources, Alexander wished to inform his mother Olympias on this. But this discoverer was not excessively naive. He also needed to plan prudently and made closer inquiries, thus comparing once more his global ideas with concrete observations and information.

The result of this was that the Indus flowed into the “Great Sea”, with two river branches. Therefore, by the way, he is said to have removed the remarks to his mother in the letter to her.24 When the advance across the river, beyond the Punjab towards the east to the Great Sea, had failed due to the resistance of his troops, the journey down the Indus and his tributaries was begun, which had been planned before.25 Now it was possible to reach the limits of the *oikoumene* at least in this direction, concluding here the conquest of the world and its exploration. To what extent Alexander was preoccupied by this thought is shown very clearly by his behaviour on the estuary of the Indus.26 In Patala, where the Indus divides into his two outlets, he ordered the building of a harbour station and shipyards, subsequently sailing on the western river arm in direction of the sea, unswerving in the face of all difficulties connected with this endeavour. In the mouth of the river and immediately before it were two islands, on which Alexander sacrificed according to the instructions he had received by the oracle of Ammon in the Siwa Oasis.

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23 279–288, on this see now Bianchetti 2009b, 119ff.
24 So according Arr., *Anab.* 6.1.1–6; cf. also Diod. Sic. 17.89.5; Strab. 15.1.32; Curt. 8.9.9; 9.1.3.
25 On this see Beloch 1925, 29 n.1. In general, the sacrifices in November 326 on the Hydaspes are also to be noted, see Arr., *Ind.* 18.11 and esp. *Anab.* 6.3.1ff., where the geographical aspect becomes very evident.
26 Diod. Sic. 17.104.1; Curt. 7.9.9; Plut., *Alex.* 66.1ff.; Arr., *Anab.* 6.18ff.; *Ind.* 20.10; Just., *Epit.* 12.10.4.
But this was not enough, for he proceeded onto the open sea, “in order to have navigated the ocean outside India” as his companion Nearchus, who was nearby, guessed.\(^\text{27}\) He wished to obtain exact knowledge and saw a glorious deed also in this exploration.

It is significant that he sacrificed here on the ocean, on the edge of the world, to the same god, Poseidon, in the same way, with a golden bowl, as during the transition to Asia at the beginning of the campaign in the Hellespont—except that this time, he even threw the bowl into the sea. Thus beginning and—outermost—end of the expedition were fixed both in time and space, and at the same time the borders of Asia, towards Europe and the limit of the world.

The withdrawal into the heart of the Persian Empire and the Oriental Empires, to Susa and Babylon, followed. Alongside this, too, an exploration was undertaken. If the Indus was not the Nile and thus very obviously the Persian Gulf or the Red Sea was part of the oceanus—as could be known from Scylax’ journey and Aristotle’s *Meteorologica*—then it was possible to search for a return journey on this route, and thus also on this occasion extend the existing knowledge by comparing global ideas and concrete research. In this respect, this researching return journey was the consequent continuation of the Indus-journey and the advance onto open sea. It was thus simultaneously part of a greater exploration of the world, as it is touched on in the speech at the Hyphasis mentioned above, becoming visible in the later intentions and plans (see *infra*). Precisely at this point Nearchus—who must have known best, since as head of the exploration fleet he was the most likely to have been trusted with the king’s plans—speaks of *pothos*:

“Alexander had a longing to sail out into the sea and round from India to Persia”. In the face of the greatness of the task and the difficulties, however, he was hesitant. “Yet his perpetual desire to do something new and extraordinary (*kainon ti aiei kai atopon ergazesthai*) won the day” (Arr., *Ind*. 20.1–2, transl. P.A. Brunt 1983). In a highly characteristic manner this elementary impetus to discover and conquer was combined with thoroughly realistic instructions for the concrete exploration, which was important for the administration of the empire, internal communication and economic development. We have seen above that the same Nearchus, more austere than Alexander, emphasised this as his task, namely investigations on the inhabitants as well as on conditions regarding navigation and agriculture.\(^\text{28}\)

\(^{27}\) Arr., *Anab*. 6.19.5.

Nearchus’ journey brought much information, albeit being rather disappointing regarding the practical purpose of coastal navigation. Having barely survived, the explorers could only report about a truly disfavourable region. In this respect it was only surpassed by the Desert of Gedrosia, where Alexander had suffered immense losses during his “exploration” of a daring overland route from India into Persia. However, the fleet’s journey at least brought further information on the Strait of Hormuz and the narrow entry into the Persian Gulf, which suddenly opened up a view onto rich and legendary Arabia. It may be assumed from the start that this especially attracted Alexander, but there is also a good deal of evidence of it; and once again, pothos is mentioned (Arr., *Anab.* 7.1.1) or, with a negative colouring of the intemperance contained within it, “restlessness” (*polypragmosyne*).²⁹

When in this context it is said that his “desire” had incited him to journey down the Euphrates and the Tigris to the sea, as in the case of the Indus (Arr. loc.cit.), then here, too, can be recognised the characteristic mixture of the urges of explorer and conqueror as well as practical and purposeful investigation and reconnaissance. The very concrete and carefully planned intention was the conquest or the control of the Arabian Peninsula. To this the king was certainly incited by information on the religion, customs and legendary riches of the country (Arr., *Anab.* 7.20.1ff.) as well as the curiosity of a discoverer mentioned just previously. In addition, any ruler of Babylon traditionally had the task of dealing with the tribes of the Arabian Peninsula, as Peter Högemann has conclusively worked out.³⁰

Alexander joined all these aspects into an undertaking of large scale and careful, also geographical, planning. Besides the primarily military preparations, several journeys of exploration were planned in order to gain information on the outline of the coasts of this mostly unknown peninsula. Here, too, a comparison and concretisation of what was schematically and vaguely held in mind as a mental map was intended. Alexander knew that to the west of Arabia there was another whole continent: Africa or Libya, as was its ancient name. Egypt also, already controlled by him and representing at first the other end of his empire, was situated there. The three expeditions led by Archias, Androsthenes and Hieron did not advance as far as had been hoped for.³¹ But Arrian claims that Alexander got to know the rest himself as explorer during

²⁹ Arr., *Ind.* 43.10; cf. *Anab.* 7.1.6 and, in general, Strab. 16.1.11 = Aristob. *FGrHist* 139 F 56; Curt. 10.1.17–19; Plut., *Alex.* 68.1ff.; Arr., *Anab.* 7.1.1–6; *Ind.* 43.8–10.
³⁰ Högemann 1985, esp. 62ff., 120ff.
³¹ Arr., *Anab.* 7.19.6–20.10; *Ind.* 43.8–10.
his conquest, emphasising this explicitly and with reference to the scientific perspective of this military elenchos (Ind. 43.10).

But even the huge undertaking concerning Arabia was not to be the end. That even more was at stake— in the end after all the exploration of the world as preparation for its conquest—is illustrated by the expedition to investigate the Caspian Sea already mentioned, undertaken at the same time as the Arabia campaign. This suffices to show that what is adduced in several instances in the context of the journeys in the Persian Gulf is plausible.32 Due to Alexander’s early death immediately prior to the planned departure to Arabia this can and could only be discussed in terms of the speculations about his final plans.

In the North, as Heraclides’ expedition in the Caspian Sea illustrates, a demarcation of the empire’s borders at the edges of the earth had been envisaged following upon an elimination of uncertainties. In this way, a concrete problem of the Persian Empire, namely the confrontation with the nomadic horsemen in this region, could be tackled simultaneously, as in the case of Arabia. Similarly, the South, too, could be brought under control, at first geographically by the circumnavigation of Africa, later in a concrete military-political sense by the encircling advance from the west against the great power Carthage. For it was beyond question that the gaze of the restless king would fall upon other areas and limits of the world after a successful conquest of Arabia. And it was self-evident that this gaze would fall upon the Scythians and Carthage, who had been for a long time on the Greek horizon, not last as a threat. The only question was, where his first step would lead him.

On this question we cannot say much more than Arrian did, who concluded a comparable discussion about the possible goals of Alexander with the words: “For my part I cannot determine with certainty what sort of plans Alexander had in mind, and it is no purpose of mine to make guesses, but here is one thing I think I can assert myself, that none of Alexander’s plans were small and petty, and that, no matter what he had already conquered, he would not have stopped there quietly, not even if he had added Europe to Asia and the Britannic Islands to Europe, but that he would always have searched far beyond for something unknown, in competition with himself in default of any other rival” (Anab. 7.1.4, transl. P.A. Brunt 1983).

This interpretation, widespread already in antiquity, so to speak a circumscription of his unlimited explorative urge, his pothos— Curtius in the same context says that Alexander had “embraced the infinite in his mind” (animo infinita complexus, 10.1.17)—hits the mark rather well. However, it needs to be added to and modified by the emphasis on rationality and planning. In this

32 Curt. 10.1.17–19; Plut., Alex. 68.1ff.; Arr., Anab. 5.26.1ff.; 7.1.2.
way an Alexander becomes visible who stands distinctively in the tradition of oriental kingship, in which the exploration of the world merges with the idea of its control. One should here think especially of the journey of Scylax under Darius I that was mentioned, but also of the expeditions to explore Africa undertaken by the Pharaoh Necho and the Great King Xerxes (Hdt. 4.42ff.). However, in Alexander’s case this is not simply *imitatio*. He reached this on his very own ways and continually strengthened it decisively through his elementary impulses to explore and conquer right up to the world’s boundaries. By exploring it, he conquered it, and the conquest was the concrete exploration.

Alexander had not fundamentally changed the Greek vision of the world. Mentally, it was already directed towards the whole. But after his campaigns, infinitely more was known regarding many details. Many of those charged with the exploration and measuring of the world presented their results in various treatises. Alexander’s official records could be used as a source. Participants of the campaigns, historians and biographers reported their view of the events. There was a great amount of material available. Whole generations of geographers had their fill of working on them. A very prominent person in this metier, Eratosthenes of Cyrene, used the many details already in the 3rd century in order to give a new shape to the *oikoumene* and especially base the idea of Asia on solid research in the long run. The connection of theory and practice carried out by Alexander, entirely novel within Greek geography, in this way also revolutionized the theoretical conception of the world.
CHAPTER 6

Geographical Description and Historical Narrative in the Tradition on Alexander's Expedition

Veronica Bucciantini

The asiatic expedition of Alexander the Great not only updated the geographical knowledge that dated back at least to Aristotle, but also created the outcome of a real ‘revolution’ in the arrangement of the world, grasped in its new borders and conquered.1

We can reconstruct this ‘revolution’ thanks mainly to the fragments from the first generation of Alexander’s historians, who were at the same time hetairoi of the King, and who tried to explain the new geographical prospect on the basis of the extant knowledge of the world, explaining the unknown through what was known.

The paper will not resume here the theoretical approach of the Alexander-historikern, but will single out some of those geographical descriptions, which offer a privileged point of view through which one may also understand the historical events lived by the protagonists.

Through geography it is possible better to understand the accounts of what actually happened, and probably also the different aim behind the stories related by those who joined Alexander’s great endeavour.

Unfortunately only a few fragments2 from this rich production have survived, through a selection that, on the one hand, limits our knowledge, but on the other allows us better to grasp the peculiarities of different works, as these fragments show us what was considered, in antiquity, the most significant and peculiar passages of the work they belonged to.

I will consider here some fragments of Nearchus of Crete (FGrHist 133), Onesicritus of Astypalaea (FGrHist 134), Ptolemy son of Lagus (FGrHist 138) and Aristobulus of Cassandreia (FGrHist 139), related to Indian hydrography, and significant for several reasons. First of all because the attention to hydrography is a common element of the examined works due to the obvious

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2 Zambrini 2007, 210–220.
importance of rivers, which served as main roads and water routes for trade, and as natural borders and privileged places for sacrifices.\(^3\)

Indian hydrography in particular had a leading role from November 326 BC, when Alexander began descending river Hydaspes to the confluence with Indus, and then towards Indus’ mouth.

A second important reason is that rivers have been used, together with mountains, by Eratosthenes to border the sphragides,\(^4\) and they received a special attention within scientific geography, that tried geometrically to represent the oikoumene (for instance, Hipparchus\(^5\) argued against the linear description of the rivers made by Eratosthenes).

From a passage of Arrian’s *Anabasis* (6.14.4–5) one sees how accurate and carefully sought for by Alexander was the knowledge of the Indian rivers: “When he had settled these affairs . . . and he sailed a short way down the Hydraotes; but where the Hydraotes joined the Acesines, since there the name Acesines takes precedence over Hydraotes, he sailed down the Acesines too till he came to its meeting with the Indus. These four great, navigable rivers pour their waters into the Indus, though they do not all keep their original name; the Hydaspes runs into Acesines, and pouring in its whole stream takes the name Acesines; then again the Acesines meets the Hydraotes and, taking in this tributary, retains its own name; next it takes in the Hyphasis, keeping its own name till it runs into the Indus; after this confluence it loses its name to the Indus”\(^6\).

The description is full of details, but differs from Megasthenes’\(^7\) account, according to whom the Hydraotes runs into the Acesines after receiving the waters of the Hyphasis: it does not, then, flow directly into the Hydraotes.\(^8\) See figure 6.1.

One could reasonably infer that Arrian had drawn for this passage on a different source from those of Megasthenes; a source, nevertheless, coming from the historians mentioned above. From this account one sees that Alexander and his entourage noted and wrote down a large amount of information on India.

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3 Sacrifices on rivers’ banks are made by Nearchus on Indus (Arr., *Ind.* 21.2) and by Alexander on the bank of the Istrus (Arr., *Anab.* 1.4.5), of the Acesines (Arr., *Anab.* 5.29.5), of the Indus (Arr., *Anab.* 5.3.6; 5.8.2) and in open water, far from the Indus’ mouth (Arr., *Ind.* 20.10). See Bucciantini 2009.
5 See FF 19–22 Dicks.
7 FGrHist 715 F9a = Arr., *Ind.* 4.8.
8 Ptolemy has a different hydrographical view: see *Geog.* 7.1.27. For the problems of the passage of Megasthenes see Tomaschek 1862, 1896; Kiessling 1914, 230–236; Karttunen 1989, 117.
FIGURE 6.1 Map to illustrate campaigns of Alexander in India (Bunbury 1879).
These pieces of information, which stood a landmark in later tradition, were the result of autoptic investigations, and data collected from Indian natives.

References to local informers and to Indian members from the Alexander's army are given by Arrian\(^9\) who calculates that, when Alexander began the expedition, among his 120,000 men there was a large amount of Indian auxiliaries, with a deep knowledge of the country.\(^10\)

In order to understand, therefore, the role of geographical element within the works of first-generation Alexander's historians, I will begin with Nearchus of Crete,\(^11\) appointed by Alexander “Navarch” on the banks of the Hydaspes, who sailed in September 325 BC from the mouth of the Indus heading to Susa, where he arrived in the spring of 324 BC after an adventurous coastal navigation.

Nearchus wrote at the end of his expedition a *Reisebericht* preserved in the royal archive at Babylon: we know of it from the second part of Arrian's *Indiké* (17.6–42.10).\(^12\) Among the fragments of Nearchus the comparison between Nile and Indus has a peculiar importance: the navarch declares\(^13\) that, in Alexander's opinion, the currents of river Acesines were the sources of the Nile for the presence of crocodiles and the so-called Egyptian bean; the King would have changed his mind only when he learned that the Indus flowed into the sea.

A passage of Strabo\(^14\) is also relevant, where we read that Nearchus explained the long-standing issue of the Nile's floods with the observation of Indian rivers, which flood in summer because of the rain.

\(^9\) Arr., *Ind*. 19.5.
\(^10\) See also Arr., *Anab*. 6.1.5–6; Plut., *Alex*. 66.5; Curt. 8.5.4.
\(^12\) This paper will not consider Nearchus' information on rivers and streams of the Pakistan and Iranian coast (the mouth of Arabis *Ind*. 22.8, the torrential river Tomerus *Ind*. 24.1, the mouth of the Anamis *Ind*. 33.2, the torrential river Areon *Ind*. 38.7, the river Sitacus *Ind*. 38.8, the torrential river Padargus *Ind*. 39.2, the river Granis *Ind*. 39.3, the torrential river Rogonis *Ind*. 39.6, the torrential river Brizana *Ind*. 39.7, the river Oroatis *Ind*. 39.9, the river Pasitigris *Ind*. 42.5). They are in fact particular information, useful for precisely describing the territory, but not particularly significant for the general structure of the work of Nearchus.
\(^14\) Strab. 15.1.25 = *FGrHist* 133 F 20. See Biffi 2005, 177–178.
Indeed there were many aspects that could suggest to the Greeks an identification Indus-Nile: the fauna, to floods and, not least, the physical appearance of the Indians who looked like the Egyptians.  

These similarities pushed therefore explanations, probably based on the Hippocratic medicine, which attributed to similar climatic conditions similar consequences on the environment and on the fauna in distant areas. It is a rational approach that looks for an explanation useful to clarify, i.e., also the mystery of the Nile, whose floods until then had not been satisfactorily enlightened.

The Indian experience, in its vastness and peculiarity, seems therefore to offer to Nearchus some ways to explain the Nile’s phenomenon: it does not surprise us that the different descriptions of the Indus by Nearchus, Onesicritus and Aristobulus focus on the delta of the great river: “Near Patalene, they say, one comes at once to the country of Muscanus,... but last of all to Patalene, a country formed by the Indus, which branches into two mouths. Now Aristobulus says that these mouths are one thousand stadia distant from one another, but Nearchus adds eight hundred; and Onesicritus reckons each of the two sides of the included island, which is triangular in shape, at two thousand, and the width of the river, where it branches into the mouths, at about two hundred; and he calls the island Delta, and says that it is equal in size to the Aegyptian Delta, a statement which is not true. For it is said that the Aegyptian Delta has a base of one thousand three hundred stadia, though each of the two sides is shorter than the base. In Patalene there is a noteworthy city, Patala, after which the island is named”.

The different measures are likely to be explained by the difficulties in identifying the coastline and in the problematic localization of Patala, where the river was divided into two arms (Western and Eastern) that kept both the name Indus.

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15 Strab. 15.1.13; Arr., Ind. 6.9. See Dihi 1962a, 99–100; Schneider 2004, 88–112 and 318–319.
17 Arr., Ind. 6.7–8; Bosworth 1993b, 418–424; Schneider 2004, 44–45; see Biffi 2000, 142–143.
18 FGrHist 133 F 18 = FGrHist 134 F 26 = FGrHist 139 F 48 = Strab. 15.1.33.
20 For the modern identifications of Patala (Tatta—Bahmanabad—Nasarpur—Hyderabad) see Kervran 1995, 283–286 and Biffi 2000, 118–119.
The comparison with the Nile’s delta shows the importance of the river in the description of Asia, as the Nile was a cornerstone in the description of Libye; but it also allows us to understand the ways in which the Alexanderhistoriker approached the phenomenon “Indus” that was, f.e., for Nearchus the beginning of a sea-route that is progressively identified his Indian achievement.

The Indus, the Ocean’s coast, the Tigris’ mouth and its final ascent: all these waters form, so to speak, a ‘water-line’, which constitutes the backbone to Nearchus’ expedition and narration. This account was of course not restricted to sea-faring experiences, but when later commentators and scholars quoted and mentioned Nearchus’ book, they thought the passages on navigation a distinctive feature of his work.

Nevertheless, it is clear that Nearchus’ book must have included mentions of the Asian expedition of Alexander, as it is shown by fragments whose content focuses on different moments of expedition and navigation on rivers and the Ocean.

This lost work preserved events previous to the navigation on the Ocean, and perhaps even contemporary to it: it was, in fact, a real Alexandergeschichte, where geographical and hydrographical information play a considerable role, not limited to the annotations made during the navigation. Nearchus’ name was automatically linked with his periplous and this might have led ancient scholars to pay more attention to navigation, leaving behind many different information on Indian geography, on which, however, other historians of Alexander have dwelled.

One is able to notice the kind of selection made by tradition from by comparing Nearchus’ fragments to the fragments of the other hetairoi-historians

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21 Some passages of the Anabasis cover events that could not be included in the report of the navigation: f.i., we learn from Anab. 6.13.4–5 (= FGrHist 133 F2) that Alexander was irritated against those who blamed him for fighting in the frontline of his army, and thus jeopardizing his life, until a Boeotian pointed out that these were the sufferings to be endured by those who aim to big deeds. Arrian also attributes to Nearchus the account of the suicide of the Indian Calanus, with a lot of details (Anab. 7.3–6 = FGrHist 133 F4), and according to Strabo (Strab. 15.1.5–6 = FGrHist 133 F3) the admiral himself explained the reasons that led the King to undertake the return from India through the desert of Gedrosia.

22 See the preparations and the descent from the upper Indus to the mouth: Ind. 18–21.6; Anab. 6.2.2–3; 6.4.1; 6.18.2–21.2.

23 See Arr., Anab. 6.24.2–25.6. See also Strasburger and Zambrini, who argue that Nearchus was the source of the Strapazenbericht. On the problem about the genesis of Nearchus’ account and its possible literary rielaboration after Alexander’s death, see. Bucciantini 2014.
of Alexander: to begin with Onesicritus²⁴ of Astypalaea, who joined the expedition of Nearchus on the descent of the Indian rivers as helmsman of the royal ship and then continued—with Nearchus—to Susa, where they were both rewarded by the king with a golden crown.²⁵

In the 39 Onesicritean fragments one finds geographical and hydrographical information: we learn from Strabo²⁶ that Onesicritus told about plenty of minerals in Carmania²⁷ and mentioned a river carrying golden straws. We can see from such a passage a fondness for the fabulous, and here lies the main difference between Onesicritus and Nearchus, who constantly corrected the traditional fictional view of the East, exemplified f.i. by Ctesias of Cnidus.²⁸

Onesicritus’ data on the golden river, apparently confirmed by a passage of Pliny²⁹ on Hycanis, a river in Carmania, are unparalleled in Nearchus. This has led Brown³⁰ to suppose that Nearchus provided a description of Carmania devoid of details. The scanty remnants allow no further comparison, but one might notice that the Onesicritean fragments quoted by Strabo highlights a trend, to be found in Onesicritus’ original work, to the fabulous and grand.

Onesicritus is also responsible for information about Indus’ floods without land winds and about the conformation of the marshy indian coast which, at the mouth of the rivers, was the result of alluvial deposits, of tides and winds. One can detect in the preserved fragments of the Astypalaeans the interest aroused by the great Indian River, principal path for Macedonian conquest, and also a central element for geo-climatic configuration of India and for the Greek knowledge of the country.

There are references to other big rivers: we learn from another Strabo’s passage³¹ that, according to Onesicritus, the Tigris flowed into a marshy lagoon, while the Euphrates entered the same lagoon of the Tigris, then came out and flowed finally into the sea.

²⁵ Arr., Anab. 7.5.5–6 = FGrHist 134 T6.
²⁶ Strab. 15.2.14 = FGrHist 134 F 32 Ονησίκριτος δὲ λέγει ποταμὸν ἐν τῇ Καρμανίαι καταφέροντα ψήγματα χρυσοῦ· καὶ ὀρυκτοῦ δὲ εἶναι μέταλλον καὶ ἀργύρου καὶ χάλκου καὶ μίλτου· δρή τε εἶναι δύο, τὸ μὲν ἄρσενικον, τὸ δὲ ἄλος.
²⁷ FGrHist 134 Komm. 479.
²⁸ FGrHist 688.
²⁹ Plin., HN 6.96–100 = FGrHist 134 F 28
³⁰ Brown 1949, 119–120.
³¹ Strab. 15.3.5 = FGrHist 134 F 33.
Nearchus, instead, believed that both Tigris and Euphrates flowed out in the same lagoon; this means that, apart from the complex topographical problems, the geographical information of Onesicritus were similar, even if not identical, to those discussed by Nearchus.

In addition, other fragments of Astypaleian confirm this analogy (FGrHist 134 F9–10–26–27), probably resulting from the common experience of sea-faring. If, like Nearchus, Onesicritus too wrote a Reisebericht, as he is likely to have done, we can safely assume that in this circumstance the tradition has enucleated the information which marked a distinction between the tale of the Astypaleian and that of the Cretan, creating not only different profiles but also different peculiarities in the works of the two historians.

The problem of the content and therefore of the genre of the work comes out clearly for Onesicritus, to whom Diogenes Laertius (6.84) ascribes How Alexander was brought up. Onesicritus’ fragments seem never to dwell on such a topic as Alexander’s education: Jacoby, followed by Lesky, conjectured that How Alexander was brought up was kind of an incipit, which could properly introduce the discussion of a different topic, and was later mistaken by historiographical tradition for the title of a work.

Ptolemy and Aristobulus of Cassandreia, on their turn, were also interested in hydrographical problems in their works on Alexander: the second one joined the Asian expedition as architect or engineer (F9 and F51).

Of his work, probably written in his old age, we know neither the title nor the internal partition: a huge variety of topics and interests, such as geography, ethnography, toponymy, botany and hydrography seems a distinct feature for this work.

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32 The supposed existence of a Onesicritus’ Reisebericht can be a useful element also in solving the problem of the dating his literary work, considered by some scholars earlier than the account of Nearchus. This idea is based on a passage of Anabasis (6.2.3), where Arrian reproaches Onesicritus had lied in his work defining himself non-pilot—as Nearchus defines him in a passage of the Indiké (18.9)—but admiral of the Alexander’s ship: the Navarch would have then redefined the role of Onesicritus a posteriori. See Pedech 1984, 164. Otherwise the possible existence of two contemporary logbooks, one of Nearchus and one of Onesicritus, could delete the problem of knowledge by the Navarch of the self-definition of Onesicritus. See Bucciantini (forthcoming).

33 See FGrHist 134 Komm. 468; Lesky 1962, 946 and 992, n.185.

A passage from Strabo\textsuperscript{35} about Ochus and Oxus, rivers of Hyrcania\textsuperscript{36} used as trade routes, refers that for Aristobulus, Oxus was the largest river among those he had seen in Asia, apart from Indian rivers: the information is also attributed to Eratosthenes, who probably got it from historians of Alexander.\textsuperscript{37}

Strabo,\textsuperscript{38} who receives the details from Aristobulus and Ptolemy—historians deemed trustworthy—refers, according in this case to Aristobulus,\textsuperscript{39} that a river of Sogdiana, called Polytimetus by the Macedonians, disappears in the desert, as it happened for the river Arios which flowed through the land of the Arians: “Aristobulus calls the river which flows through Sogdiana Polytimetus, a name imposed by the Macedonians (just as they imposed names on many other places, giving new names to some and slightly altering the spelling of the names of others); and watering the country it empties into a desert and sandy land, and is absorbed in the sand, like the Arios which flows through the country of the Arians”\textsuperscript{40}.
The historian of Cassandreia is the only source for the silting of rivers: he does not explain why, but he tries to make the readers understand eastern geography by comparing the big size of the Asiatic rivers to the big size of a Thessalian river.\footnote{It is also worth noting that the attribution of a Macedonian name to the river is as an example of a Greek translation of Iranian onomastics; in other words an interpretatio graeca.}

Strabo\footnote{Strab. 16.1.9–11 = FGrHist 139 F 56.} refers also information on the Tigris and Euphrates and on the works of canalization and maintenance the river must undergo in order to regulate the floods and the course of the river. According to Aristobulus, Strabo quotes Alexander’s provisions to make river navigation easy and safe as well as the sea connections with the Arabian Peninsula (“Aristobulus says that Alexander while driving up the river he inspected the ship and did clean the channels from the company of those who accompanied it. Also he closed mouths and made it open the other”).

The passage can be compared with another of the Anabasis (7.7.7), attributed by Brunt\footnote{Brunt 1983, 223.} to Aristobulus, by Briant\footnote{Briant 1986, 12.} to Nearchus, and related to the destruction of Tigris’ cataracts, a measure adopted by Alexander to provide easier communications in the country.

If to this information we add those related to the distance between the two arms of the Indus (15.1.33), it will result a quantity of hydrographical information handed down by Aristobulus equal to any other historian of Alexander.

One reason for this special attention given to the hydrographical element can be detected in the interest of Aristobulus for engineering works and for the strategic aspect of exploiting natural elements: the history of Aristobulus favoured in all likelihood, those elements that celebrated the strategic choices of the king and that determined successes and victories.

This interpretation, which sets a correspondence between the personality and the author’s interests, and the kind of selected information, can also be used to explain the absence of information about hydrography in the fragments of Ptolemy son of Lagus,\footnote{Berve 1926, 329–335, n. 668; Wirth 1959, 2467–2484; Pédech 1984, 215–222; Tataki 1998, 200, n. 10; Heckel 2006, 235–238.} who came from Eordeia\footnote{Papazoglou 1988, 166–169.} and belonged to a parallel branch of the Macedonian royal family; he was among the hetairoi
and was exiled by Philippus in 337 BC later becoming one of the bodyguards of the King.

After Alexander's death, Ptolemy became King of Egypt and wrote—probably in old age—a *Alexandergeschichte*, which together with the work of Aristobulus is a first-rate source for Arrian's *Anabasis*.

In his long account of Bessus' capture, Arrian informs us that Alexander crossed the Oxus River, and when the messengers reported that Spitamenes and Dataphernes were able to capture the satrap, the King slowed the chase, until Ptolemy himself, distrusting Spitamenes, captured Bessus.

The son of Lagus led him to Alexander: the news about the difficulty of crossing the Oxus come from Aristobulus, while Ptolemy's tale focuses on capturing the satrap, without adding any geographical data.

Ptolemy's work, we may assume, was not concerned with geography and in particular to hydrography. Let us consider another passage of the *Anabasis* (5.21–24) where Alexander marches against King Porus and destroys Sangala, with some limited information on the greater rivers of the Indus' plain:

a) *Anab.* 5.21.4 Alexander arrived to the river Hydraotes, another Indian River, as broad as the Acesines but not so swift in current.

b) *Anab.* 5.21.6 Alexander crossed the Hydraotes without the difficulties which the Acesines had caused.

c) *Anab.* 5.22.3 The King on the second day after leaving the river Hydraotes, came to a city called Pimprama.

Another passage of the *Anabasis* reports that Ptolemy, describing the difficulties of Alexander crossing the Acesines, where the current was particularly strong, noted the size only of this river among all the Indian rivers (*Anab.* 5.20.8: Αὐτὸς δὲ ὡς ἐπὶ τὸν Ἀκεσίνην ποταμὸν προύχωρει. τούτου τοῦ Ἀκεσίνου τὸ μέγεθος μόνου τῶν Ἰνδῶν ποταμῶν Πτολεμαῖος ὁ Λάγου ἀνέγραψεν. “He himself moved towards the Acesines. The river Acesines is the only river of India whose size Ptolemy son of Lagus has described”.

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47 *FGrHist* 138.
48 *FGrHist* 138 F 14 = *Arr.*, *Anab.* 3.29.6–30.5.
50 *Anab.* 5.21.4 Ἐπὶ τοῦτον ἔλαυνον Ἀλέξανδρος ἀφικνεῖται ἐπὶ τὸν Ὑδραώτην ποταμόν, ἄλλον αὐτὸ τοῦτον Ἰνδὸν ποταμὸν, τὸ μὲν εὖρος οὐ μείονα τοῦ Ἀκεσίνου, ὀξύτητι δὲ τοῦ ῥοῦ μείονα.
51 *Anab.* 5.21.6 αὐτὸς δὲ ἐπέρα τὸν Ὑθραώτην ποταμόν, οὐ καθάπερ τὸν Ἀκεσίνην χαλεπῶς.
52 *Arr.*, *Anab.* 5.20.8–9 = *FGrHist* 138 F 22.
Therefore Arrian himself emphasizes the lack of hydrographical descriptions in Ptolemy, who had instead fully described attacks, sieges and conquests of new territories.

To summarize, from these brief data on treatment of hydrographical aspects (or lack thereof) by the first generation of Alexander’s historians we can infer that the filter of tradition not only does not avoid to point out the features of the different accounts, but also helps better to delineate the different personalities of those who inserted geographical descriptions in works meant to tell their own history of Alexander.

The distance—different in the analyzed authors—from the facts and the motivations—not wholly considered here—of the genesis of works that belong to a period still close to the events, does not seem to influence the vividness with which the new geographical reality had entered into the cultural heritage of Greeks, who transferred it to future generations.

The comparison Indus-Nile is an example of how the expanded wealth of knowledge revisited a longstanding question and suggested solutions.

Such a comparison is a leading topic, but one may notice further themes, like the impact of unknown rivers, the consequences of unknown oceanic waters, where, first, the culture of the individual historian peeps out, and secondly, one detects the way in which the historian used the known data to understand the unknown. These ways were altogether different: Nearchus’ rationality, Onesicritus’ fondness for fabulous, Aristobulus and his military style, the pragmatism of Ptolemy: these accounts share a common element, that is, the authors are fully aware they are exposing an expedition which was destined to change History.54

54 Mittag 2010, 25–37 has argued that the ancient geographical knowledge of India, enlarged by Alexander’s expedition, will remain inextricably linked to it, and virtually unchanged through the remaining centuries of the ancient world.
PART 2

Geography between Science and Politics
A. Geographical Science
From the disc to the sphere: this could be a condensed summary of the journey of Greek geographical thought from its origins to the “scientific” change, with all the limits of formulas that necessarily sacrifice the complexity of a question to the effectiveness of synthesis. Effectively, the disc is not exclusive to the origins, neither is the sphere identified completely with a “scientific” approach: nevertheless we see in it traces of an *iter* in the moment in which the *oikoumene*, the continents, the ocean, the seas, must find space and position in a newly created “container”, a container that is a reflection of the phenomena that everyone observes—the day, the night, the seasons, the sky, the cosmos.

The solid figure imposes new problems and new instruments, such as geometry in the first place, also linked to the need to delimit, and then to measure the spherical surface. Then astronomy: observing the celestial vault presents itself in a new light, and gives new impulse to research and experimentation; the idea is affirmed that the earth is part of a cosmos, and that the geography of the earth is a component of it. To sum up: the perspective of the spherical conception of the earth is counterpoised against the “flat” conception; the elementary conception of the latter gradually gives way to reflection on a series of factors that are tied to one another, in the elaboration of which it appears legitimate to note the presence of a trace that indeed belongs to the scientific character. Indeed, some of these factors, in a fragmentary and perhaps also random way, were at the origin of the formation of a spherical conception.

It is evident that the times and means of this process are not definable by the nature of the process itself; it is in any case certain that a determining moment for it is represented by Eudoxus of Cnidus; and it is equally certain that an essential moment of the subsequent developments is represented by Dicaearchus, if we consider, among other things, his *eutheia* in the perspective of a fortunate “grid”.

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**CHAPTER 7**

**Some Scientific Approaches: Eudoxus of Cnidus and Dicaearchus of Messene**

*Michele R. Cataudella*
1 Eudoxus of Cnidus

He was a scientist with wide-ranging interests¹ and in the history of science he certainly occupies an important position. He lived for 52 years, roughly in the first half of the fourth century. The chronological indications are given approximately, and not because we are lacking in precise data, but, on the contrary, because there is much information and it is discordant: and, in effect, tradition, which has different origins by nature and quality, knows three dates for his akme, staggered over more than half a century,² 423-2, 391-0 and 368-5. This last is most in tune with other information regarding his biography, including the important journey to Egypt, which took place when the Pharaoh Nectanebo was ruling, between 382 and 364, and Eudoxus was introduced to him by Agesilaus, the king of Sparta who died in 361–0.³

His mentors were above all Archytas and Plato, two points of reference of great significance if we consider the premises and the instruments of his doctrine in various fields, and the role of Plato was certainly determinant, above and beyond the tradition—recalled by Diogenes Laertius (8.87 ff.)—regarding discord between teacher and pupil).⁴

Just a few notes regarding his merits as a scientist in disciplines other than geography: in the field of geometry a seminal source for garnering information is the fifth book and, in part, the sixth book of Euclid’s Elements. We think of the theory of the relationships between pairs of magnitude (ana logon, Plut., Marc. 14.59–60), of the ὁμογενῆ μεγέθη, of the relations between incommensurable magnitudes as well as between commensurable magnitudes (Eucl., Elem. 10.1),⁵ to the definition of the “golden section” (Elem. 6.3).⁶

Astronomy is perhaps the most significant field of his scientific thought. He created, or anyway made use of, observation points near Heliopolis (Strab.

1 Diog. Laert. 8.86 and Suda, s. v. Eudoxos.
3 See in particular Diod.Sic. 1.96.2 (= T 16 L.) and Strab. 17.1.29–30 (= TT 12 e 13 L.).
4 See for example, Vlastos 1975, 60–2; Hetherington 1996, 271–89; among the more recent Gregory 2002, 155.
5 Useful profiles and contributions in Giannantoni and Vegetti 1984 (in particular Cambiano 129–49); Repellini 1993, 1, 2, 305–43; with bibl.; the contribution of K. von Fritz 1988, 64–67, is seminal, with particular attention given to the role of Eudoxus in the history of the discipline and in the genesis of the “method of exhaustion” (the “episontica” of Hasse and Scholz), premise of a completely new stereometry.
6 Regarding this subject see Lasserre 1966, 161–72, with bibl.; see also Kouremenos 1996, 55–85.
17.1.29–30) and Cnidus, from which he was able to see the star Canopus, not visible from a higher latitude (Strab. 2.5.14). It is likely that he made use of a diopter. Vitruvius (*De arch. g.8.1 dicunt*. . . dicunt) knew of a discovery made by Eudoxus: this was an instrument known as an *arachne*, whose workings are known through Ptolemy, Theon of Alexandria and John Philoponus; Eudoxus’s discovery could perhaps have been a precursor of Hipparchus’s *organon*, while not being the same thing: the origin of the name is uncertain.

He wrote the *Phaenomena* and the *Enoptron*; we know the first through Aratus; this work was probably written in his mature years, even though a determining chronological value cannot be given to the well known *Cnidius senex* of Avienus (*Arat. 2.53*), translator of Aratus among others. It is difficult to identify the difference in intent in the composition of the *Phaenomena* and

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7 See commentary in Lasserre 1966, 195; I have written on Strabo’s text in Cataudella 2013, 47–57.
8 See *infra*; regarding the development of this instrument, see Hultsch 1903, 1073–79, s.v. *dioptra* and Drachmann 1935, 1287–90, s. v. *dioptra 3*. This was an instrument for measuring distances of far off bodies, consisting of an axis like a flat ruler, orientable at the top, from which the observation was made; on its use we find information in Gem., *Isag. I.4*; 5.11; 12. 4.
10 Synes., *Ad Paeon*. 5.
11 On the relationship between the Eudoxus’s *arachne* and stereographic projection, see Neugebauer 1949, 240–56.
12 See Tannery 1930, 49–60.
13 *In Arat. et Eud. phaen*. 1.2.2 (Manitius 1894), 8; see also Maula, Mattila and Kasanen 1975–6, 225–57.
14 A good source for learning about Eudoxus’s thought, if it is true that Aratus had truly followed Eudoxus to the letter (Hipparch., *In Arat. et Eud. phaen*. 1. 2. 1–2 and 8 [Manitius 1894] τῇ Εὐδόξου περὶ τῶν φαινομένων ἀναγραφῇ κατηκολούθηκεν ὁ ᾎΑρατος); see also Maula, Mattila and Kasanen 1975–6, 225–57. This might be sufficient to maintain that Aratus’s depiction reproduces Eudoxus’s with his own characteristics, as Cicero recalls (*Rep. 1.22: descriptionem sumptam ab Eudoxo multis annis post non astrologiae scientia sed poetica quadam facultate versibus Aratum extulisse*). Certainly we cannot know how authentic the tradition of “Aratus’s globes” is; to be borne in mind in this regard is the considerable collection of material by Thiele 1898; interesting information is found in a Byzantine author, *Leontius Mechanicus* (Maass 1898, 561–7); his work Λεοντίου Μεχανικοῦ Περὶ κατασκευῆς Ἀρατείας σφαίρας presumably reflects the culture of *Leontius’* period, and therefore the obvious preference for the doctrines of Hipparchus and Ptolemy compared with that of Aratus, slavish follower of Eudoxus, but at the same time it testifies to the vitality of Aratus and, indirectly, of Eudoxus. See also Szabó-Maula 1982.
the \textit{Enoptron}, given that the two works could seem to be copies of each other.\footnote{15} There is a difference to be noted, however, with regard to the relationship between the longest day and shortest night, if the proportion is 12:7 in the \textit{Phaenomena} and 5:3 in the \textit{Enoptron}.\footnote{16} But there is no shortage of topics of uncertain evaluation\footnote{17} (for example, FF 67 and 68; 108, 111, 112a and 112b L.).\footnote{18}

Of the other works on astronomy we recall the \textit{Peri aphanismon heliakon};\footnote{19} there are no indications on the period in which the \textit{Peri tachon} was composed, in all likelihood later than the studies in geometry, given that it presupposes them in the construction of the system of the spheres with which Eudoxus aimed to “save the phenomena”.\footnote{20} On the other hand, I do not think that a contribution of any kind can come from F 63b L., and from the comparison in the comparative \textit{(Enoptron φαίνεται ἐδέ...καὶ ὁ ἥλιος...ἀδηλότεραν)}.\footnote{21} The priority of the \textit{Peri tachon} could be suggested only by the extremely laconic formula-

\footnote{15} Hipparchus, who knew the two works well (1.2.1 = F 4 L.), says that they are each totally concordant with the other, apart from a few exceptions (σύμφωνα κατὰ πάντα σχεδὸν ἀλλήλοις πλὴν ἀλίγων σφόδρα).

\footnote{16} Hipparch. 1.3.9. I follow the text that has come to us in the attribution of the two proportions to the two Eudoxian works respectively, which seems to me to be in any case preferable to the inversion, at the price of a “heavy” intervention on the text, such as eliminating the expression ἐν τῷ ἐπιγραφομένῳ Ἐνόπτρῳ in F 68 L., proposed by Maass (so that the fragment would pass from the \textit{Enoptron} to the \textit{Phaenomena}).

\footnote{17} See Lasserre 1966, 193, with discussion.

\footnote{18} In truth, the fact that Eudoxus used ἀπλατέες in the \textit{Phaen.}, as is understood in the version of Aratus (F 62 L.) and πλατέες in the \textit{Enoptron} (FF 63a e 63b L.), and therefore the latter represented a more recent moment (see Lasserre 1966, 193), is a non-documentable hypothesis, given that neither of the two adjectives appears in a text of Eudoxus, not even in the one cited to the letter by Hipparchus, who seems to know just one opinion of Eudoxus in this regard. On the other hand, why should Aratus have followed a doctrine of the \textit{Phaenomena}, and not the doctrine expounded in the \textit{Enoptron}, if the priority had been of the \textit{Phaenomena}, and that of the \textit{Enoptron} the most up-to-date edition of Eudoxian thought? (and Aratus, who wrote about a century after Eudoxus, must have known both works.)

\footnote{19} See Lasserre 1966, 212–13.

\footnote{20} See bibl. \textit{infra} n. 29.

\footnote{21} In other words, the comparison in the comparative ἀδηλότεραν (F 63b L., and commentary by Lasserre 1966, 193) can indeed be understood, for example, in the same sense as Aristotle (\textit{Metaph.} 12.8.1073b 17 [= D 6 L.] ἐν μείζον ἐδὲ πλάτει λελοξῶσαι καθ’ ἄν ἡ σελήνη φέρεται ἢ καθ’ ἄν ὃ ἥλιος) with regard to the comparison between the plane of inclination of the moon’s circle, greater than that of the sun.
tion of the Enoptron, as Hipparchus had passed it on, and which, as such, could presuppose a wider formulation (for what this is worth).  

The work Oktaeteris can also be associated with the context of astronomy, a work that ancient tradition attributed to Eudoxus, but which Eratosthenes believed was not authentic; according to Censorinus (De die nat. 18.4), the author could have been Dositheus. A clue to the period of composition would seem to be related to the fact that Eudoxus’s name is sometimes associated with the Egyptians (for example, Gem., Isag. 8.2o–23), and this could be a reference to his stay in Egypt as a young man. Indeed, the cycle of eight years must have served to “conciliate” the lunar calendar with the solar calendar, or the lunar month—and thus the year of 354 days—with the solar year; but whether the first intuition in this sense in Greece dates to Eudoxus (so from an Egyptian inspiration), cannot be affirmed with certainty; it is highly likely that the limits of this conception were understood above all by Eratosthenes, as we learn from Geminus (Isag. 8.2o–4 and 42–60 in particular), who follows Eratosthenes, but informs well on various opinions. It appears likely, in the end, that in this field his work was prevalently a dissemination of the Egyptian doctrines, as perhaps he had done with the dialogues of the Dogs (Diog. Laert. 8.8g = T 7 = F 374 L.); the Egyptian experience also suggested to him the use of the parapegma, a sort of calendar inscribed on stone.

22 The chronological succession supposed by Lasserre (1966, 193)—Phaenomena, Peritachon, Enoptron in this order—can be puzzling: for example, it can be surprising that Hipparchus makes no mention of the Eudoxian text of the Phaenomena, more so that he was in agreement with him, and against Attalus, according to Aratus’s “translation”, and cites only the text of the Enoptron; it could be surprising that the thought expressed in the latter work was reported by Hipparchus in an extremely laconic and not particularly thoughtful way, and that the polemic is directed against Attalus (δοκεῖ...ὁ Ἀτταλος ἀγνοεῖν), ignoring Eudoxus. All deductions here appear precarious: on the one hand it could be deduced that Eudoxus had written nothing about it in the Phaenomena, and that therefore he had written about it in the Enoptron; it could be deduced, on the other hand, that the topic was only touched on in the Enoptron because it was dealt with in depth elsewhere. Regarding the data relating to Aratus, cf., for example, the wide-ranging collection and discussion in Maass 1955 and Ludwig 1965, 26–39.


24 See in particular Diog. Laert. 8.86 = T 7 L.; see also Dugand 1985, 103–27.

25 On this topic Tannery 1912, 236–99 is still useful; on the Milesian model see, for example, Dicks 1970, 84–86. Through Geminus’s calendar we can obviously delineate the extent and the nature of the relationship between Eudoxus and his predecessors, Democritus and Euctemon, in the construction of the calendar. The contributions made by Rehm 1913, 1941 and 1949, 1295–1366, remain fundamental.
Among the works of astronomy we cannot fail to mention the so called *Ars Eudoxi* or *Didascalia caelestis by Leptines*, a compilation drawn up in Egypt between 193 and 165 BC, a school work, presumably, containing various notions of astronomy, Eudoxian in plan, but certainly not written by the scientist from Cnidus.

The thinking of the astronomer Eudoxus must have had great resonance if among his followers, even though they introduced important changes, were Callippus and Aristotle; Eudoxus’s thought was born of the need to respond to Plato’s question, whether or not there existed a way to “save the phenomena” (διασωθῆναι τὰ φαινόμενα), or to provide some reason for the irregularity of the planetary motions, as they appear to us, through the combination of circular, uniform and regular motions. His answer is in the theory of the so called homocentric spheres, expounded in the work, *Peri tachon*, known to us through the brief, but incisive presentation made by Aristotle and above all the more elaborate description of Simplicius, in the commentary to the second book of Aristotle’s *Cael.* (121–124 L.). The *Phaenomena* and the *Enoptron* on the one hand and the *Peri tachon* on the other, independently of the problems of relative chronology, are the poles of Eudoxian research consequential to the need of διασωθῆναι τὰ φαινόμενα: we do not know what procedure was adopted by Eudoxus in demonstrating this, we can only imagine; Giovanni Virginio Schiaparelli, among others, has attempted this, making use of seven theorems of elementary geometry and being careful not to use instruments, such as spherical trigonometry and analytic geometry, that were not yet known.

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26 *Didascalie céleste de Leptines* is the title given by Letronne, when he was preparing the first edition of the papyrus, which, because of his death, was completed by Brunet de Presle 1865, 25–76, and then re-published by Blass in 1887 (Blass 1997, 79–101); see also Neugebauer 1975, 1, 686–88.

27 Eudoxus is probably not the direct source of the Saitic calendar (*P. Hibeh* 1. 27, 19–54), but in it we can find elements in common with the *Ars Eudoxi*. For the text see FGrHist 665 F 180 and commentary by Lasserre 1966, 214–19.

28 See p. 6 L. and the translation with clear commentary by Heath 1957, 194–202, and *infra* n. 32. Wide-ranging information on Eudoxus’s influence, for example, in Gardies 1989.

29 See on this concept Mittelstrass 1962; Lloyd 1978, 202–22; Lasserre 1966, 182, 270.

30 See, for example, Dreyer 1906, 90–6, and above all Neugebauer 1953, 225–29; to be borne in mind the contributions, from different points of view, of Wright 1973–74, 165–172; Riddell 1979, 1–19; Maula 1974; Hetherington 1996, 271–89; Heilen 2000, 55–73; new investigations into the theory of homocentric spheres by Bowen-Goldstein 1983, 330–40 and Yavetz 1998, 221–78.
in Eudoxus’s day; but these are obviously only hypotheses. His reconstruction is now classic, even if there has been no lack of reservations and criticisms.\textsuperscript{31}

Eudoxus the geographer is linked with this wide-ranging and articulated perspective. As such he was presented by Polybius (cited by Strabo) and by Strabo (9.1.1; 10.3.5); he was author of a \textit{Ges periodos} that included all the \textit{oikoumene}, as far as it seems.\textsuperscript{32} The fundamental points of his geographical thought, as far as the information we have allows us to suggest, can be identified in an idea of the earth that moves from the spherical conception (for example, \textit{σφαιροειδῆς}, referring to the moon in \textit{Ars Eudox.} 12, is extended to the earth by analogy of the phenomena depending on the lack of their own light, \textit{καὶ ὅπερ γίνεται ἐπὶ τῆς γῆς}); in the form of the \textit{oikoumene} long twice the width; in the measurement of the terrestrial circumference, it is 400,000 stadia.\textsuperscript{33} Eudoxus knew the \textit{antoikoi}, who are, according to Geminus (\textit{Isag.} 16.1), “those who live in the southern area of the same hemisphere”, distinct from the \textit{antipodes}, who are to be found in the southern zone of the opposite hemisphere (\textit{άντοικοι δὲ οἱ ἐν τῇ νότῳ ζώνῃ ὑπὸ τὸ αὐτὸ ἡμισφαίριον κατοικοῦντες, ἀντίποδες δὲ οἱ ἐν τῇ νότῳ ζώνῃ ἐν ἑτέρῳ ἡμισφαιρίῳ κατοικοῦντες). His idea of the \textit{antoikoi} suggests a conception of hemispheres that is close to that developed by Nicagoras with regard to the origins of the floods of the Nile; Eudoxus has in mind the rotation of the seasons and their contraposition, but he goes beyond this when he thinks of the origin of the floods as an effect of the clash of opposing climatic factors—warmth and cold. Aristotle delineates an analogous thought on this plane; the ambiguous term \textit{antiperistasis} in truth seems to allude to the climatic clash as well as to the succession of the seasons, from which the phenomena characteristic of the opposite hemispheres derive.\textsuperscript{34}

\textsuperscript{31} See Heath’s exposition, 1957\textsuperscript{2}, 202–11 based on Schiaparelli; Herz instead offers a trigonometric demonstration, 1887, 20–1, cited by Heath 1957\textsuperscript{2}, 203–5; to be borne in mind Loria 1925, 199–204; considerable information in Lasserre 1966, 203–4; but see also Neugebauer 1957\textsuperscript{2}; recent re-readings, for example, in North 1994, 143–54 and Hegmeier 1996, 51–71.

\textsuperscript{32} With regard to the themes dealt with in this work, there is probably nothing decisive that allows us to pull out the testimony of Strabo (10. 3. 5 \textit{περὶ κτίσεων, συγγενεῖων, μεταναστάσεων…}): it is likely that these words refer to Eudoxus as well as to Ephorus, but this Eudoxus is author of \textit{Hellenic Histories} (\textit{περὶ τῶν Ἑλληνικῶν}), of which Eudoxus of Cnidus is not the author, the author of \textit{Histories} is in fact Eudoxus of Rhodes (see Diog. Laert. 8.90; \textit{Etym. Magn.} s.v. \textit{Ἀδρίας}), who therefore may enjoy greater credit as a writer \textit{περὶ κτίσεων, συγγενεῖων, μεταναστάσεων.}

\textsuperscript{33} Arist., \textit{Cael.} 2.14.297b–298 a: even if not explicitly attributed to Eudoxus, the context does not seem to leave any doubt in this regard (cf. Tannery 1893, 110–121).

\textsuperscript{34} An important document is the \textit{De inund. Nili} (Aristotelian or pseudo Aristotelian), see, for example, Bonneau 1971, 1–33; and now Jakobi-Luppe 2000, 15–18; for the meaning
Considering the ratio 2:1 between the length and width, and the width of the warm zone, double that of the *oikoumene* (for example, Arist. *F* 26 Rose), thus there is a geometric figure with the southern side made up of the equator (the *oikoumene* plus the northern half of the warm zone); if in this figure we imagine an ideal line that joins the Nile and the Tanais, we can just see the *schema* of the Eudoxian *oikoumene*, symmetrically distributed between the eastern and western part with respect to the already cited "meridian". Thus, approximately, three books (I–III) deal with Asia and three with Europe (IV–VI), the seventh deals with the islands. The description seems to begin with the north-eastern Asian coast (book I), moves to Egypt and, presumably, to Ethiopia (book II), and then to southern Asia (Arabia, India, Persia and Mesopotamia) in the third book, of which we have no quotations; we start again with the European eastern coast, Thrace, Macedonia, Chalcis Peninsula, etc. (book IV), part of Greece, Thessaly, Boeotia, etc. (presumably matter from the fifth book, of which no quotations have reached us) up to the Peloponnesus, southern Italy, and finally Libya (book VI).

Thus far a rough consideration, even though we cannot exclude other hypotheses in the context of the *Periodos*. In truth, the route followed by the author does not seem to be an itinerary; we can indeed see that two adjacent areas are the subject of the first and the fourth book, with which the expositions respectively regarding Asia and Europe begin: this seems to be a sign that the exposition is conceived of as a function of the two continents. The point of departure in the two directions would seem therefore to be a borderline in of *antiperistasis* cf. in particular Arist., *Mete*. 348b 2 ἀλλ’ ἐπειδὴ ὄρῳμεν ὅτι γίγνεται ἀντιπεριστάσις τῶν ἀρχῶν καὶ ψυχρῶν ἀλλήλαις, where he describes a sort of reciprocal reaction of hot and cold with relative climatic effects in relation to the various zones of the earth; see Burnikel 1974, 161–7.

Whether Eudoxus created a "geographical map" cannot be affirmed with certainty; *schema* is the word that Strabo (9. 1. 2) uses to indicate one of Eudoxus’s competences (*σχημάτων ἐμπείρου*), which can be a clue in favour, as is the expression εἴ τις νοήσῃ with which the citation of Eudoxus begins in the same passage of Strabo; on the Strabonian “filter” see Engels 1998, 63–114: 73–76. After all, there must be a significance to the fact that Geminus (*Isag*. 16.3) talks of ἐν πίναξι γράφοντες apropos of those who depict the earth as being roughly twice as long as it is wide, making use of rectangular-shaped tables (* Geliş* 1966, 239–40).

Genesis and structure of this figure especially in Lasserre 1966, 240–1 and already in Gisinger 1967, 17.
truth that follows precisely the line of a meridian; now, if this was the idea in Eudoxus’s mind, and if the line Nile-Tanais was the characteristic feature, then the question arises as to whether the genesis of the Eudoxian vision will ever be detectable.

The combination of the FF 350 and 306 L. suggests a clue: we think of the eutheia of the F 350, which for us has, or in reality has, a direction NW-SE, from the Ceraunian Mountains to Cape Sounion; this is a line which cannot easily be anything else other than a segment of a parallel (ante litteram, if we wish), premise of the eutheia by Dicaearchus and of the subsequent developments. Indeed, the indication of an S and an N to the right and the left respectively of the eutheia (F 350 L., ἐν δεξιᾷ μὲν ἀπολείψειν τὴν Πελοπόννησον δὴν, πρὸς τὸ δὲντον, ἐν ἀριστερᾷ δὲ καὶ πρὸς τὸ τῆς ἱπτὸν τὴν ἀπὸ τῶν Κεραυνίων ὄρων) certainly proves to be significant in that it appears in place of those that would be in reality the NE and the SW, that Strabo would not have failed to indicate exactly, as he did elsewhere (an example [2.4.5]: ὁ δὲ Τάναῖς ῥεῖ ἀπὸ θερινῆς ἀνατολῆς· ἐλαττοῦται δὴ τοῦ συνάμφω μήκους τῷ μεταξὺ τῆς θερινῆς ἀνατολῆς καὶ τῆς ἰσημερινῆς, with which the course of the Tanais is indicated in the NE-SW direction, namely from the θερινὴ ἀνατολή, and with the parallel forms as a wedge that marks the difference in length between Europe and the sum of Africa and Asia). We add that the coastal line from the Ceraunian Mountains to the Gulf of Corinth is not in reality an eutheia, but is a slightly curved line; given that it is conceived as a straight line, it cannot but assume a general progression tending to coincide with the Pillars of Hercules, on the line of the extreme east which is Cape Sounion. Finally, the connection with the klimata: it appears rather obvious from mention of them as specific Eudoxian material with regard to the eutheia, so that in the eutheia itself we can still identify the salient features of a segment of the line of parallels.\footnote{Lasserre 1966, 259–60 opts instead for an orientation in the direction of meridians linked to the division in two parts according to the proportion width : length = 1 : 2; see also Prontera 2011, 149–63.}

From the sphere to the tabula: the correction seems to be an indicator of a ‘cartographic’ operation. It implies a rotary movement in an anti-clockwise direction, which reflects itself on the geometry of the European continent in its entirety; therefore, if the hypothesis has a foundation, every line—ideal or real—of direction NE-SW assumes a N-S direction, consequence of a correction like that of the eutheia. In other words, an ideal line of progression NE-SW that forms a right angle at Cape Sounion with the eutheia that starts at the Ceraunian Mountains, following the “correction” assumes the direction N-S of meridians.
This seems to be the case that is set out in the F 306 L., if we have understood well: and there where the Sarpedon promontory, which in reality is oriented towards SW, instead is oriented towards S (πρὸς εὐρόνοτον) following an anti-clockwise movement more or less analogous with that of the line that starts in the Ceraunian Mountains; therefore, if the latter represents the parallel, the line that follows the direction of the promontory allows us to make out the trace of a meridian. It is a meridian that likely passes through Cnidus, Eudoxus’s land, and follows the course of the Nile, as it appears; but above all, if this is the case, this is the meridian along which the border between Europe and Asia runs, explicitly recalled through the straight line between Abidus and Sestus (ἀκρα γὰρ ἔκκειται πρὸς εὐρόνοτον, συνάπτουσα τὴν Εὐρώπην πρὸς τὴν Ἄσιαν ἐπτασταδίῳ πορθμῷ τῷ κατὰ Ἀβυδον καὶ Σηστόν . . .); it is therefore obvious that the Tanais is an integral part of it to the N, and for much of tradition it is indeed the Tanais that is the borderline between Europe and Asia.

Could this then be the genesis of a Nile-Tanais meridian that finds indeed a natural integration, obvious if the premises are founded: the Tanais, if it flows out on the NE point of the Maeotian Lake, following the anti-clockwise “correction”, assumes a more marked orientation towards the N, and therefore is more in line with the meridian and its divisor function between Europe and Asia.

Three aspects of this representation attract attention: the double orientation of the F 306 L., in a W-E direction (beginning from the Thracian Chersonese), in the first part, and E-W (looking towards the west) in the second, as it roughly appears; the association of Egypt with Asia; the association of Libye with Europe. These are significant elements, even if not easily and unequivocally interpretable: I would not in any case think of an eastern or western origin, respectively, of the last two, inspired by propagandistic motives (even though, for example, the Persian conquest of Egypt could not have been lacking in effect on the geopolitical vision of the African arena from the point of view of the other two continents). In any case, the “cut” of the Periodos suggests a vision of the oikoumene founded on a divisionary line in the direction of meridians: a meridian, if a parallel can be identified in the eutheia of the

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38 In the same direction in a wider perspective, see Cataudella 2009, 53–59.
39 That this was known as an ancient idea we learn, for example, from Anon., Geogr.Esp. 2 (GGM I 495): Οἱ μέντοι παλαιοὶ τὴν τε Λιβύην καὶ τὴν Εὐρώπην ὥσπερ μίαν ὄντεταν.
40 See the lucid profile in Mazzarino 1959, 85–101; any propagandistic motives linked to the contraposition of the parts in Görgemanns 2000, 405–420.
F 350 as a segment of that which will be the characterizing line of Dicaearchus’s depiction.⁴¹

It seems that the key to Eudoxian thinking is here as it seems to take shape at this point: a Nile-Tanais line that most likely passes through Cnidus, Eudoxus’s homeland; from his point of view it is therefore the meridian of Cnidus that determines a division in two parts in the sense of meridians—one occupied by Europe, the other by Asia. It is a contraposition that appears as that belonging to the vision of a Greek from Caria: a Europe that is almost a reflection of Asia, given that the first three books are dedicated to the latter and the three subsequent books to Europe; but this is not all, given that this “meridian of Cnidus” is linked to the Nile, this allows us to perceive the constant presence of an Egyptian inspiration, in tune with the early education of the scientist from Cnidus.⁴²

So, if the point of view is turned towards Lower Egypt, the right represents the west and the left the east, as is evident;⁴³ therefore, if Cnidus is the point of observation on the same meridian, for him the right is identified with the west and the left with the east. And thus it is that on his right the Mediterranean, the ἡ παρ’ ἡμῶν sea, the sea of the Greeks, h3w-nbw.t according to the Egyptians themselves,⁴⁴ and since Europe is to the right of the meridian, thus again we have a sign of the ideal equation Europe = Mediterranean.

But this is an orientation that can assume its own revelatory value precisely in its Egyptian context: in reality the orientation of the Egyptians was that

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⁴¹ Regarding the Caspian Sea, whether it was an open or closed sea, the material remaining for us does not allow us to know Eudoxus’s thought with certainty (a mention of Hycania in F 344 L.); the fact that, being located between Herodotus and Aristotle, he could only think of the Caspian as being “closed” seems to be a rather hurried conclusion. We cannot ignore completely, perhaps, some trace of the pre-Herodotean experience (Hecataeus essentially) in the conception of the oikoumene of which we have testimony in Ephorus (FGrHist 70 F 30). But Aristotle’s criticism (Mete. 362b 10 γελοίως γράφουσι) is wide ranging against those who depicted the earth in a circular form in their ges periodoi. On the other hand, if there really were some element of Persian inspiration in Eudoxus’s thought (let us not forget his youthful studies in Egypt), then there could be the influence of factors extraneous to the point of view of Herodotus and Aristotle, linked to propagandistic interests of the Achaemenid monarchy, analogous, we feel, to those that belong to Alexander’s propaganda in favour of an “open” Caspian with the objective illustrated by Polycletus of Larisa (FGrHist 128 F 7); but we have no direct testimony in this sense.

⁴² See, for example, Préaux 1968–72, 347–61; Goyon 1974, 135–47.

⁴³ The largest collection of material is found in Sethe 1922, 197–242; see now Garcia Zamacona 2012, 185–94.

⁴⁴ See, for example, Vercoutter 1956, 127–57; Helck 1979, 34; Iversen 1987, 54–9.
founded on an eastern point of view, so that the left represents the south, the right the north: the former identifies the birth of the Nile, the latter its disappearance in the sea. There derives from this a symbology darkly (αἰνίττονται) negative regarding the right, in that the north coincides with the sea—the Mediterranean—that represents the “death” (τελευτὴν καὶ φθορὰν) of the Nile; and the sea is the object of hatred for this reason, to the point where in Egyptian hatred is expressed with the ideogram of the fish, symbol of the sea. The concept, in the Greek area, appears to have been clearly expressed by Plutarch (Quaest. conv. 8.8.2, 729 B) ἐν <δὲ> τοῖς δεξιοῖς φθειρόμενοι αἰνίττονται τὴν τοῦ Νείλου τελευτὴν καὶ φθορὰν ἐν τῇ θαλάττῃ γινομένην. Eudoxus’s choice between the two orientations conforms with his division in the direction of meridians, and is a “European” choice, in that it is in contrast with the eastern perspective of the Egyptians, harbinger of hatred for the Mediterranean. Eudoxus’s Mediterranean is the sea of Europe, the ‘sea of the Greeks’ for the Egyptians, as it must have presented itself from the point of view of a Greek on the borderline between the two continents.

In the last analysis this depiction is the presumable message of Eudoxus the geographer, the prefiguration of a parallel and a meridian, destined over the centuries to have much fortune, and already, just half a century later, known to Dicaearchus (F 110 W.) when he drew the line from the Pillars of Hercules to the Imaus: but trace of it can also be seen, for example, in Aristotle, in his representation of the oikoumene of greater length compared to its width in the ratio 5:3, from the Pillars of Hercules to the Imaus and from Ethiopia to the Maeotian Swamp (Mete. 362b 24), substantially a schema analogous to that of Eudoxus, prior to Dicaearchus and Eratosthenes. But it is a message that also has an ideal value, if not political, in the vision of the Mediterranean as expression of the west identified with Europe, and of its unity before Asia, intended as unitary expression of the east, of which Egypt is the outpost—Eudoxus’s direct point of reference.

2 Dicaearchus of Messene

A man of the era of Aristotle and of Alexander the Great, Dicaearchus followed the basic approach to geography of Eudoxus, a protagonist of science in the first half of the century, but at the same time he affirmed his own personal point of view on the central themes of the debate. Most probably a Sicilian, from Messene: his knowledge of Sicilian words and convivial customs from this region is well documented (FF 94–97 W.), and thus confirms his origin.

Significant clues exist in favour of a dating to the second half of the fourth century and the beginnings of the third; he was a pupil of Aristotle, who died
in 322–21, and was a contemporary of Aristoxenus: we can deduce that probably Dicaearchus lived beyond the end of the fourth century.\textsuperscript{45} A clue perhaps comes from Dicaearchus himself, if the passage from Cleomedes (1.8.42) in which the arc of the meridian from Syene to Lysimachia is discussed derives from him, given that Lysimachia was founded in 309.\textsuperscript{46} A more precise delimitation of the chronological terms would be obtained if the designation as \textit{reges}\textsuperscript{47} of the promoters of his activity as surveyor of altitudes presupposed—as indeed would appear likely—the assumption of the title of \textit{basileus} from the Diadochi, beginning roughly from 305.\textsuperscript{48}

He wrote a \textit{Bios Hellados}, perhaps a story of man from the origins to his times;\textsuperscript{49} he also wrote \textit{politeiai}. Particularly interesting is the \textit{Tripolitikos}, probably a dialogue, perhaps inspired by a polemic with the \textit{Trikaranos} by Anaximenes.\textsuperscript{50} It is possible that this is to be identified as the work that inspired the anonymous Byzantine author of the \textit{Peri politikes}, which we read of in Photius (\textit{cod. 37}).\textsuperscript{51}

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\textsuperscript{45} Data and discussion on Aristoxenus especially in Wehrli 1967, 43–6; Id. 1968, 527–8; Smethurst 1952, 224–32.
\textsuperscript{46} See, for example, Diod.Sic.20.29; Paus. i.9.9.
\textsuperscript{47} F 105 W.
\textsuperscript{48} See Diod.Sic.20.53.2–5; Plut., \textit{Dem.} 15; Wehrli 1967, 43, thinks of Ptolemy, Cassander and Demetrius of Phalerum; nevertheless the text of the \textit{Suda} contains a clarification that cannot be lacking in significance, in that the title of the work we read there is \textit{Katametreseis ton e n P e l o p o n n e s o i oron}, which could limit the identification of the \textit{reges}, and by consequence could lower the chronological terms. In this case the \textit{reges} would in likelihood be identifiable with Cassander and Demetrius Poliorcetes. The chronological \textit{terminus} would then be linked to the struggle between the two for dominion in Greece in the years of the end of the century, and could go as low as 302, when the new League of Corinth was reconstituted, and proclaimed Demetrius Poliorcetes \textit{hegemon} of Greece with the related title of \textit{basileus}, as is evinced by the Plutarchian annotations (\textit{Dem.} 25. 5 \textit{e Prae. ger. rep.} 823c-d). A description of these matters is found in Will 1979, i, 74–83; see also Landucci Gattinoni 2000, 211–25; to be borne in mind the observations of Keyser 2001, 364–5.
He also wrote *Bioi, or Lives of the Philosophers*, a genre Dicaearchus created together with his friend and co-pupil Aristoxenus, and he also wrote a *Trophoniiou katabasis*,\(^{52}\) and furthermore on the soul, on the end of men, on the *bios praktikos* contrasted with the *theoretikos*, etc.; his dominant characteristics of originality of thought and autonomy in his judgements are evident in his polemics with Plato (regarding *Phaedrus*), with Aristotle, his mentor, and with Theophrastus, while, on the other hand, he exerted considerable influence on Polybius and on Cicero, to the point of being worthy of adjectives such as *doctissimus* (Varr., *Rust.* 1.2.16) and *historikotatos* (Cic., *Att.* 2.2).

He was a geographer more than an astronomer, unlike Eudoxus and he wrote a *Periodos ges*;\(^{53}\) he demonstrated independence with regard to Eudoxus of Cnidus, even if the scarcity of the fragments that remain—from both figures—do not allow us to make any significant observations. He was a supporter of the spherical nature of the earth, as Eudoxus was, but this does not imply that the first depended on the second, given that this conception was in Aristotle (*Cael.* 2. 297a, 8. 298 a), his mentor, and dated even further back in time to some of the *palaioi* who were supporters of the spherical form according to Agathemerus (1.1 *πάλαιοι τὴν οἰκουμένην ἔγραφον στρογγύλην* [= 109 W.]), perhaps even to Homer and Hesiod, as Crates of Mallus thought,\(^{54}\) and Homer was recognized by Strabo as the first of the geographers.\(^{55}\)

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52 See F 20 W. That this text—presumably a dialogue—was inspired by hostility towards the priests of Trophonius was an opinion of Müller 1820, 150; see in any case, Wehrl 1967, 46–8 and the considerable material collected by Radke 1939, 678–95; still fundamental is Zeller-Mondolfo 1966, 467–71 and 484–7.

53 Whether the *tabulae* that Cicero mentions are works of geographical depiction, and to which text they are pertinent, cannot be established with certainty (the hypothesis of a play on words—dating back to Boot and Watson, cited by Wehrl 1967, 48—appears unlikely, given that the context does not allow us to imagine anything of this kind). In truth, it is indeed likely that Dicaearchus is the author of *tabulae*, and not only because of the testimony of Diog. Laert. 5.51 (τοὺς πίνακας, ἐν οἷς αἱ τῆς γῆς περίοδοι εἰσίν, to be collocated in the stoà, by testamentary order of Theophrastus, who was also a long-living contemporary of Dicaearchus, and most probably knew the *Periodos ges* of the latter), but by the very nature of his geographical conception that was necessarily an integral part of a depiction (vd. FF 109, 110 W.). See also Prontera 2001, 1961–64.

54 For which reference is made to Mette 1936, VIII–XX and to the recent edition, Broggiato 2001 (see in particular the summary, L1–LV and the commentary, 284–86).

55 Among the *palaioi* we could also include Parmenides (e.g., F 44 D.-K. 1954\(^{7}\)), who lived between the sixth and the fifth centuries BC. The doubts regarding the value of the term *στρογγύλη* in the sense of “spherical”—raised by Frank 1923, 198–203—should have been overcome through the comparison with the famous Platonic passage (*Phd.* 97 D) in which
Regarding the form of the ecumene, he maintained that the length was one and a half times the width, while Eudoxus believed that the former was double the latter (Agathem. 1.2); that Dicaearchus’s measurement might be inspired by Democritus’s (F 15 D.-K. 1954\(^7\), II, 145) is a piece of news that does not create any particular difficulty only because Democritus believed the earth to be flat (Arist., Cael. 2. 294b13): evidently the form of the oikoumene was a different problem, compared to that of the spherical nature of the earth, and it is equally evident that Dicaearchus dissociated himself from Eudoxus on this point.

A measurement of the terrestrial meridian made by Dicaearchus would certainly be significant, if we can attribute to him what Cleomedes (1.5.47) writes;\(^{56}\) in effect we could be induced to believe it if the central “meridian” of a round oikoumene had undergone a shift in the direction of parallels following the passage from the circular form to the oblong form.\(^{57}\) The measurements of the oikoumene would be consequential, given the 2 : 3 ratio, if the entire length were 30,000 stadia (15,000 \(\times\) 2 with respect to the “centre”), this implies a width of 20,000 stadia, which coincides with the distance between Syene and Lysimachia (20,000 stadia according to the testimony cited by Cleomedes): nothing could be better if this distance could be held to be equivalent to the width of the oikoumene. Undoubtedly these are measurements that do not correspond precisely to reality, but, if nothing else, they seem to represent data having specific regard, not so much for the real measurements—in any case then outside of an effective possibility of calculation—as for the proportional relationship between them.\(^{58}\) The question obviously remains open, but an indicative value seems anyway undeniable.\(^{59}\)

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\(^{56}\) See Berger 1880, 173–4; Id. 1903, 368–76; Roller 2010, 143.

\(^{57}\) Or, indicatively: if, let us say, the “centre” was 10,000 stadia from the Pillars of Hercules (FF 109, 110, and above all F 111 W.: τοῦ γοῦν Δικαιάρχου μυρίους μὲν εἰπόντας τοὺς ἐπὶ στῆλας ἀπὸ τῆς Ἑλληνικῆς σταθὲς) in a circular figure, and roughly 15,000 stadia must have been the same distance in the figure made oblong by 2:3, this implied the consequent shift of the “centre”, that thus would come to coincide roughly with the Syene-Lysimachia meridian on the line from the Pillars of Hercules to the Imaus. But nothing assures us, and in any case—it goes without saying—we are dealing with measurements that are entirely approximate.

\(^{58}\) For a different view see Keyser 2001, 361–8.

\(^{59}\) Regarding the width of the oikoumene, there appears to be no doubt that the distance from the Pillars of Hercules to the Peloponnnesus can be said to be equivalent to the distance from the Pillars of Hercules to Delphi, to meson (F 109 W.); different measurements are presupposed, for example, by Aristotle (Mete. 362b), from Ethiopia to the extreme
The measurement of the meridian was apparently 30 myriades, 300,000 stadia, 15 times the distance of 20,000 stadia between Syene and Lysimachia, and 5 times the same distance was apparently the measurement of the diameter, or 100,000 stadia. Aristotle (Cael. 2. 298a) knew that the meridian had a measurement of 400,000 stadia, attributed to “scientists” that could also have included Eudoxus (Καὶ τῶν μαθηματικῶν δὲ δυσὶ τὸ μέγεθος ἀναλογίζεσθαι πειρώνται τῆς περιφερείας, εἰς τετταράκοντα λέγουσιν εἶναι μυριάδας): they are both wrong, as we know, but the former tends to be closer to Eratosthenes measurement.60 Cleomedes’ text appears to be clear in its contraposition of the cosmos and the terrestrial sphere regarding the measurement of the meridian: δέκα δὲ μυριάδων τὴν διάμετρον ἔχων ὁ κόσμος... Πρὸς ὃν ἡ γῆ μὲν στιγμαία οὕσα πέντε καὶ εἴκοσι μυριάδων ἐστίν: 250,000 stadia, almost equivalent to Eratosthenes calculation (Cleom. 1.7.49)61 on the basis of the ratio 1 : 50:62 this would be certainly a significant aspect of Dicaearchus’s work.

In the perspective of the cosmos, if there is a trace to be glimpsed already in Eudoxus,63 in truth it appears that we can see in Dicaearchus revelatory clues, in some way, of an organic system in which the measurements of the cosmos and the measurements of the ecumene reflect a unitary conception: the measurement of the arc between the constellations of Cancer and Draco and the relative perpendiculars on the terrestrial plane recall the 20,000 stadia of distance between Syene and Lysimachia on the relative meridian (1/15 of

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60 Archimedes (Aren. 2. 136, Mugler) provides the same datum, 300,000 stadia, but without saying who was the author of it (καὶ πεπειραμένων...). Discussion of the data in Wehrli 19672, 77–9.

61 See Bowen, and Todd 2004, 81. For the Eratosthenic measurement of 252,000 stadia see Vitru., De arch. 1; Plin., _HN_ 2.247; Strab. 2.5.7; 2.5.34; Theon, _De util. math._ 124. 10–12; Galen., _Inst. log._ 12.2.

62 The link between these two measurements tends nevertheless to evade us: in any case, the fact that the latter is so small as to represent only a point compared to the former justifies some reservations.

63 See, for example, Strab. 2.5.14.
the terrestrial meridian), agreeing, if we have observed well, with the measure-
ment of the length of the ecumene on the basis of the proportion 2:3.64 In
any case the testimony of Cleomedes is essential, even if the attribution of the
Dicaearchus grid is only possible, perhaps even probable.65

A fundamental idea—fulcrum of his geographical conception—was a sort
of diaphragma (F 110 W.), namely the identification of an ideal line, a straight
line, in the geometrical sense of the term, from the Pillars of Hercules to Mount
Imaus (Hindu Kush most likely); the geometrical value of this line integrates
well with the geometrical figures constructed for the measurements of the
Mediterranean area, and with the terminology belonging to the discipline
(tome, eutheia, <tomon> [if my correction of F 107 W. is well founded]).66

The ideas of Dicaearchus are referred to in some way in the subsequent
speculation; among other things, he was author of a text, Katametreses ton en
Peloponnesoi oron (T 1 W.), linked presumably with his real measurements of
the heights of the mountains (FF 105, 106, 107 W.). We think of Eratosthenes,
who, like him, displayed interest in measuring the mountains, and followed
him (F 107 W.) and, it would seem, achieved analogous results independently
from the use of the diopters.67

This is how the rather marked image of Dicaearchus as innovatory scien-
tist is drawn, albeit with his obvious debts to previous speculations: Eudoxus
himself, despite the divergences, and Aristotle, his mentor, and all the labor
that moved from the Ionic speculation. And naturally he was a precursor: it
is enough to think of Eratosthenes, with whom the geographical discipline
reached its most advanced stage before Ptolemy.

64 Obviously, even if an intuition of this kind could not have evaded Eudoxus, for a more
complete vision it will be necessary to wait still for some decades (see Cleom. 1.5.57). See
the profile provided by Geus 2004, 11–26.
65 Berger himself expresses some uncertainty, 1903, 371–2, although he is a supporter of
the attribution to Dicaearchus; after all, the measurement of 300,000 stadia, indicated
by Archimedes in the passage quoted, would seem to be linked to the same climate,
even though Archimedes was not yet born, or was just born when the measurement was
made, and the use of the perfect πεπειραμένων cannot be lacking in significance (Lysi-
machia was founded in 309, destroyed in 281, this is the presupposition of the Syene–
Lysimachia measurement in Dicaearchus’s era).
66 Indications of a certain significance for the history of this aspect of geographical specula-
tion can be found in particular in Herodotus (2.16; 4.36), Arist., Mete. 2.362b 1; Strab. 2.1.32.
Wide-ranging information and discussion in Berger 1903, 379–82.
67 In any case, mention is made of a discovery (εὑρηκέναι φασίν); on the use of dioptres in
this case see the observations of Keyser 2001, 353–361, but this text leaves space for some
doubt.
CHAPTER 8

The “Invention” of Geography: Eratosthenes of Cyrene

Serena Bianchetti

We owe the “invention” of a profession to Eratosthenes of Cyrene, who first coined the terms geographer and geography for the scientific field that gained autonomy in Alexandria at the time of Ptolemy III and Ptolemy IV.1 By defining himself as “geographer”, Eratosthenes thus replaced the figure of the philosopher-researcher (who had previously investigated the “system of the world”) with the scientist, tout court, whose specificity came not so much from the content, but more from the method of investigation.

1 Eratosthenes’ Life

The times and places are revelatory about the personality and work of Eratosthenes, a progeny of the cultural humus that nurtured what might be defined as the greatest scientific revolution in antiquity. Cyrene, Athens, and Alexandria were the places where Eratosthenes first learned and later developed his activity. His life was spent within a social network that included his fellow countryman and poet Callimachus and Magas, the half-brother of Ptolemy Philadelphus, at a time when Cyrene, Alexandria and other centers under Hellenistic power were firmly linked together, and hence helped to create an international cultural élite that gave the impetus for scientific research to accelerate.2

From his native Cyrene, Eratosthenes moved to Athens to study the teaching of Zeno of Citium, who Strabo defined as “our Zeno” (1.2.34) for the close affinity that the geographer of the empire fostered towards Stoicism, which seemingly (1.2.2) was not sufficiently appreciated by Eratosthenes, who was more interested in the lessons of Ariston of Chios, Arcesilaus, Apelles,

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1 Γεωγράφος appears for the first time in Strab. 1.1.16; 1.1.19; 2.5.2; 2.5.4; 2.5.34 in passages which echoed Eratosthenes. For Eratosthenes inventor of the term γεωγραφία see Aujac 2001, 65–66.
2 Bianchetti 2014.
and Bion. It should be noted that Ariston and Arcesilaus, then students of Zeno, had broken away from Stoicism: Ariston adhering to Cynicism and Arcesilaus to a Platonic ideal. An ideal which came under heavy criticism upon the foundation of the New Academy, which was headed by Arcesilaus from 268 to 241 BC.

The adherence of Eratosthenes to the two aforesaid philosophers who, according to Strabo, were the masters who "deviated" from Stoicism—and therefore barely appreciated—constitutes the key to understanding Strabo’s critical attitude toward Eratosthenes.

In fact, Strabo relentlessly underscored how superficial Eratosthenes was in carrying out his studies. The derogatory names like "Second Plato", "New Plato", "Pentathlos" or "Beta" demonstrate how Eratosthenes’ own contemporaries belittled him and reacted to his original, but complex personality.

Nevertheless, he did set up a proper “school of excellence” in Alexandria, where different methods were pertinent to different scientific fields. His poly-matheia ventured into different spheres like poetry, grammar, astronomy, mathematics and geometry. But his inability to excel in any of these fields, and his close connection with Platonic research might explain the difficulty his contemporaries had, as did subsequent generations, to fully evaluate Eratosthenes’ innovative work. On one hand, he effectively drew on Platonic philosophy to understand the “system of the world” and, on the other, he worked toward the differentiation of knowledge, which was the basis of modern science.

This “revolution” occurred at the time of his stay in Alexandria, which perhaps began in 246 BC, when Eratosthenes was called to replace Apollonius Rhodius and manage the Royal Library, as well as to train the future crown prince, Ptolemy IV.

The dates of Eratosthenes’ life are uncertain, and may be due to modern historians in their attempts to try and tally all the testimonies handed down to us. Only the ones in the Suda—the Byzantine Lexicon—seem to offer purely historic information: the lemma (s.v. Ἐρατοσθένης) affirms that Eratosthenes was called upon by Ptolemy III Euergetes to go to Alexandria, where he lived until the reign of Ptolemy V Epiphanes. It also states that he was “born in the

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3 Suda, s.v. Ἐρατοσθένης; Marc. Her., E. Per. Men. 2 (ggm 1 565). See Prell 1957/58, 133–143 on nicknames of Pythagoras (Gamma) and Apollonius of Perge (Epsilon); Manna 1986, 37–44; Geus 2002, 31–41.
4 Strab. 2.1.41 accusing Eratosthenes of being a mathematician in geography and a geographer in mathematics.
126\textsuperscript{a} Ol. (276–272), and died aged 80\textsuperscript{a}. The information in the Suda has mostly been consistent with other testimonies that also mention Eratosthenes as a contemporary of Callimachus,\textsuperscript{5} Apollonius Rhodius, Euphoriōn, Timarchus,\textsuperscript{6} Philochorōs,\textsuperscript{7} Archimedes.\textsuperscript{8} On the contrary, the data seems to contrast with the one given by Strab. 1.2.2, who affirms that Eratosthenes was in Athens γνώριμος\textsuperscript{9} together with Zeno, who died in 262, when Eratosthenes would have been 14 years old; in other words, at a precocious age for discipleship. With the aim of reconciling the various elements, Jacoby\textsuperscript{10} suggested correcting the text of the Suda (ρκς' instead of ρκα´) in order to set 296 as the year of his birth. But the correction may not be necessary. Since the date of Zeno's death is uncertain, it is, instead, possible to agree with the testimony of Diogenes Laertius,\textsuperscript{11} who pinned the date to 130\textsuperscript{a} Ol. (260–256), thus leaving the conjecture that the 20-year-old Eratosthenes might have met the old philosopher in Athens in 256 BC.

Therefore, Eratosthenes' formative years in Athens—which would have made it possible for him to meet Strato of Lampsacus, “the physicist”—are followed by his full commitment to the prestigious institutions in Alexandria, such as the Royal Library and the Museum. In these two research centres, texts and precious objects were kept by systematically cataloging and transmitting data. Philology and geography were two disciplines sharing the same method and Eratosthenes, the philologist-geographer, demonstrated (via the correction of a text or a map) how the best edition could be reached: in philology, by diorthosis to restore the text (Homer’s, first of all) close to the original one, and likewise in geography with an updated map.\textsuperscript{12}

\textsuperscript{5} Tzetzes, \textit{Prol.} p. 43.10 (= Xic Koster); p. 32.13 (= Xia 11 Koster); p. 23.1 (= Xia Koster).
\textsuperscript{6} Suda, s.v. Απολλώνιος.
\textsuperscript{7} Suda, s.v. Φιλόχορος. On the dates of Philochorus' life (340–262/1) see \textit{FGrHist} 328.
\textsuperscript{8} Procl., \textit{Comm.in prim. Eucl.elementa}, p. 68.19–20 Friedlein, where Euclid is considered older than Eratosthenes and Archimedes (ca. 287–212 a.C.). See also Vitruv. 1.1.17.
\textsuperscript{9} Strabo's expression is “une simple boutade” for Thalamas 1921, 32–34 who translates: “lui, qui a connu à Athènes ceux qui avaient été les successeurs de Zénon, n'a rien dit de Zénon même”.
\textsuperscript{10} \textit{FGrHist} 241 komm. 740. See also Fraser 1972a, 175; 1972b, 11: 489 ff.; Knaack 1907, 358 ff. thought 284 BC; Blomqvist 1992, 54 thought 285.
\textsuperscript{12} Jacob 1996, 901 ff.
Eratosthenes’ Works

As a philologist, Eratosthenes’ activity was primarily centred on Homer. However, his interests turned to chronography in works such as Olimpionikai and Chronographiai. In the latter work, according to the testimony of Clement of Alexandria, Eratosthenes would have embraced the period from the Trojan War (1184/3) up to Alexander’s death (324/3), which was subdivided into ten periods with varied historical and literary information under the chronographical entries (but it is not certain whether or not the dates in-between were created to synchronize with the Olympic years).

What is interesting here, however, are the writings on geography, which may also be connected with those on astronomy and mathematics, especially the Platonicus, which contained definitions and interpretations of music and mathematics, destined to understand Plato’s work. Eutocius of Ascalon, in his commentary on Archimedes’ On the sphere and cylinder, refers how Eratosthenes explained, in his work, the construction of the mesolabe (μεσόλαβον), to calculate «means» (μεσόγραφα).

The Suda Lexicon attests that Eratosthenes wrote Ἀστρονομίαν ἢ Καταστηρισμούs, probably in prose, on the ascension into the celestial sphere and on the transformation into stars of various people, mythological or not.

2.1 The Measurement of the Earth

There is one testimony by Heron of Alexandria (fl. 65 AD) in the tract entitled Dioptra, as well as another testimony by Macrobius (fl. 400 AD) in the Commentary on Cicero’s Somnium Scipionis, where we find out that Eratosthenes wrote a work specifically on the measurement of the Earth (Περὶ τῆς ἀναμετρήσεως τῆς γῆς). The existence of this work has often been doubted,
but the fact that Strabo ignored the complex procedure of Eratosthenes may serve to prove how independent the Alexandrine’s Geography was compared to his other aforementioned work. Strabo even seems to allude to Eratosthenes when he says (2.5.4) that “the surveyor measures the distance from the equator to the pole, which is one quarter of the earth’s circumference”, a measurement that can be obtained from a partial figure. Even though Eratosthenes’ procedure was quite the opposite, in that he derived partial numbers from the total, Strabo’s testimony is indicative of the competence and skillfulness of a geographer-measurer, who would have had to, in any case, refer to Eratosthenes. The procedure for his measuring the earth’s circumference (250,000 stades, which he perhaps rounded out to 252,000 for convenience sake), is reported by Cleomedes (1.7.94–100), a contemporary of Ptolemy, and is based on a practical method applying approximate measurements aimed at getting a theoretical result. With reference to this theoretical measurement of the meridian—fixed at 252,000 stades—we can understand more about Eratosthenes’ stade, which modern historians have discussed so much. The stade had to measure—at least in a theoretical line—1/252,000: the stade was measured at 157.5 m., according to Hultsch, on the basis of a Plinian passage and according to the most recent doctrine, which also points out how Eratosthenes’ measurement is not very far from the real one (39,690 km. compared to the average meridian of 40,000 km.). Eratosthenes’ figures of the earth’s circumference turned out to be remote from both Aristotle’s, who thought there were 400,000 stades, and from the

21 Seidel 1789; Bernhardy 1822; Berger 1880. See also Thalamos 1921, 163; Dragoni 1979, 211–212. Geus 2002, 234, finally holds that the two measurements are to be referred respectively to (250,000 stades) On the Measuremente of the Earth and (252,000) to Geography.
23 Tupikova, and Geus 2013, 21, who observed that this measurement is attested only indirectly in ancient sources. For one stade = 148.5 or 148, 8 m. = 1/10 of a Roman mile, see Lehmann-Haupt 1929, 1952–1960, who hypothesized the existence of seven different stades in use in ancient Greece; Prell 1956–1957, 549–563; Fischer 1975, 152–167. For one stade = 158.5 m see H. von Mžik 1933, 105–11; for 168 m., Thalamos 1921, 159; for 166.7 m., Gulbekian 1987, 362–363; for 177,4 m., Reymond 1924, 82; for 177,6 m., Niessen 1903, 241; Janvier 1993, 20–21; for 185 m., Dreyer 1914, 353; Dicks 1960, 42–46; Pothecary 1995, 49–67. Against the observation by Manna 1986, 41–42, who holds the stade of 185.5 m. in use in Egypt and therefore utilized by Eratosthenes, see Tupikova, and Geus 2013, 21 on the prevalence of Greek sources rather than Egyptian ones in Geography.
one known to Archimedes, which was perhaps predicated on Dichaearchus, who came up with 300,000 stades. Said results might therefore have stimulated Eratosthenes to further his research in order to provide a new solution for an old problem.

However, if Archimedes’ testimony could make us believe that Eratosthenes’ measurement was not known during the period 230–220 BC (when the *Arenarius* was composed), the words of the Syracuse scientist would have disclosed that measuring the earth had been a widely debated problem, and that Eratosthenes had found an innovative solution related to his method, albeit with not much luck, given the predominance of a different measurement in later tradition i.e. Posidonius and Ptolemy.

2.2 *Geography*

It is plausible that after 225 BC, once he had finished educating the young Philopator and had gained the indispensable material support of the king of Egypt, that Eratosthenes might have dedicated himself to measuring the terrestrial globe, i.e. to start working as a geographer and to begin constructing a map of the inhabited world.

It is difficult for us to evaluate how important the political factor was in Eratosthenes’ work. “To measure the earth” and “design a map of the *oikoumene*”, were the two essential nodes of “organizing space” which were conceived and carried out in Alexandria within the contest of the Lagid court. Here, the sovereigns claimed the legacy of Alexander and gained recognition by spreading their ideology that crossed the confines of Egypt. The close relationship linking Eratosthenes to the political world of the Ptolemies can be inferred, in my

25 *Aren.* 2.1.
26 Fraser 1970, 188–189. The hypothesis of Berger 1880, 107; 1903, 370, taken by Dreyer 1953, 174, is skeptically analyzed by Wehrli 1967, 77 and contested by Geus 2002, 226 n.89, due to the absence of references in the fragments handed down to us.
28 References to Eratosthenes’ geographical Fragments are accorded to Berger 1880.
29 For a study on the winds, deduced by the testimony of Ach. Tat., *Univ.* 33.2 = Eratosth. F 111 A, 41 Berger: “Eratosthenes too was interested in the winds”, see Geus 2002, 253–256. For the relationship between Eratosthenes and Timosthenes, whose windrose of twelve spokes, centred on Rhodes, could be the basis of the Eratosthenic conception of the Mediterranean, see Prontera 2013, 207–217.
opinion, by his references to the sovereigns, who had generously supported his task of measuring the territory in Egypt. This is also confirmed by his lexicon. For example, the inhabited world is compared in Geography to a chlamys-cloak, which was also the shape of Alexandria on the map. Then, in order to divide the extent of Asia into sections, the scientist uses the term \( \sigma \phi \rho \alpha \gamma \iota \), literally a “seal” or a cadastral parcel, which was derived from the lexicon of the Ptolemaic administration. We can also see a Ptolemaic perspective in the decision not to divide the inhabited world into continents: the ancient problem of the Libya-Asia boundary (already widely discussed by Herodotus with reference to the geographical position of Egypt, which would end up being split in two parts if divided by a fixed border along the course of the Nile) presented a particularly difficult issue in the context of the Syriac wars. The silence of Eratosthenes on a geographical theme with political implications

33 Thalamas 1921, 159; Geus 2004, 20 ff.; Marcotte 2005, 149–155. See also the terms μέρη, μερίδες, πλινθία which appears in Strabo: Berger 1880, 223; Geus 2007, 115.
could therefore have been indicative of an inevitable decision in his role as Royal Librarian. And lastly, even his adherence to one conception of the Mediterranean that, in measuring routes and giving centrality to Rhodes, mirrored the one of Timosthenes, the admiral under Ptolemy II, may suggest that he was, somewhat, influenced by royal interests.

Therefore, taking into account the rich patrimony of empirical knowledge conserved in the repositories and texts at the Royal Library, as well as the results of the astronomic science, and the geometric method of Platonic derivation, Eratosthenes began to define the terrestrial sphere by first looking at the celestial sphere. He then delimited the space in the sphere occupied by the inhabited world to determine how the section of the sphere containing the oikoumene could be designed on a flat surface.

To study the terrestrial sphere, conceived as homocentric with the celestial sphere according to the theory of Eudoxus of Cnidus, the definition of the ecliptic was fundamental, namely the inclination of the zodiac with the equatorial plane. Oenopides of Chios (circa mid-5th century BC) had already found 24 degrees for this angle, considered to correspond to one side of a pentadecagon inscribed in the terrestrial circumference and hence calculated as \(360:15 = 24^\circ\). Eratosthenes’ procedure is different, as it is founded on the angular measurement of distance between the two tropics, calculated as \(11/83\) namely \(47^\circ\ 42'\ 40''\), according to Theon of Alexandria, a follower of Eratosthenes, or perhaps more probably \(47^\circ\ 30'\). Dividing this measurement by two, we obtain the inclination of the ecliptic expressed in degrees as \(23^\circ\ 50' (\pm 30')\).

Modern scholars almost unanimously agree on the fact that this result may be Eratosthenes’ more than any of his successors, such as Hipparchus and Ptolemy, who also accepted it. In fact, Ptolemy used a division of the circle in 360 parts and would have had no advantage by resorting to a fraction like the one in question.36

The astronomic method guiding Eratosthenes’ geographic investigation was also featured in the research of Pytheas, who, in the second half of the 4th century BC, sailed from his native Massalia to Thule, thus providing us with a precise measurement of the latitude of Massalia. And from this city, he measured the latitudes of the different places he reached during his exploration, which probably went as far as the arctic zone, or thereabouts.

35 Prontera 2013, 207–217.
From this survey Eratosthenes took two important elements: (1) the latitude of Massalia (43°N), essential for drawing the Mediterranean, and (2) the definition of the arctic circle (66°N), essential for calculating the width of the world.

The astronomical definition of the arctic pole circle established at Thule\(^\text{37}\) constitutes an important node of geographical knowledge. Up to then, this circle had been considered variable relative to the observation point. Aristotle, who appears not to know about Pytheas’ investigation or, at least did not take it into account,\(^\text{38}\) again reasoned in *Meteorologica* with a perspective that makes reference to the horizon of Rhodes and hence determines the arctic circle valid for the Greeks at 54°N, namely at the latitude of Hierne.

The decision to believe Pytheas’ data, which had shown credibility under the *sphairopoiia* laws already theorized by Eudoxus, constituted a turning point of method and merit. And from this derived the development of the first “scientific” map of the world.

The passage from the celestial to the terrestrial sphere—identified by the arctic circles, the tropics and the equator—is clear in a passage of Geminus,\(^\text{39}\) who, although not directly cited, seems to re-echo Erathostenes: “After measuring the maximum terrestrial circumference relative to the celestial meridian and having fixed the measurement in 252,000 stades with a diameter of 84,000 stades, the meridian is divided into 60 parts, with each section called a sixtieth and contains 4,200 stades, for if 252,000 stades are divided by 60, a sixtieth is 4,200 stades. The distances between the zones were thus set forth: two glacial areas, each occupying 6/60, or 5,200 stades; two temperate areas, each 5/60 wide or 21,000 stades; the torrid zone is 8/60 wide, hence from the equator to the tropics, from either of the two parts, there are 4/60 or 16,800 stades. From the terrestrial pole circle lying under the celestial pole circle up to the terrestrial arctic circle, there are 25,200 stades; from the terrestrial arctic circle, lying under the celestial arctic circle, up to the terrestrial tropic circle, situated under the celestial summer circle, there are 21,000 stades; from the summer tropic circle to the terrestrial equator, under the celestial equator, there are 16,800 stades.”

From the laws on the sphere we may even deduce the possible habitability of the region south of the equator. On this subject Eratosthenes seemingly puts forward different solutions in both *Hermes* and *Geography*: in fact, in the poem about the five zones already theorized by Parmenides, the torrid zone is mentioned as uninhabited (*Ach. Tat.*, *Univ.* 29 = F II A, 3). However, he seems to

\(^{37}\) Bianchetti 1998, 42–43.


have changed his mind in Geography, which Strabo commented on by saying: “For Eratosthenes, the region south of the equator is temperate” (Strab. 2.3.2 = F II A, 5). Modern scholars have tried to resolve this contrast by raising the possibility that Hermes preceded Geography. In my opinion, Eratosthenes’ framework seems to be the same in Hermes as it is in Geography. The reasons for the apparent contrast may be traced to the testimony of Strabo, who seems to distort Eratosthenes’ thought in order to criticize Polybius and Posidonius. Both had effectively divided into two the zone crossed by the equator, and then hypothesized three zones for each hemisphere. Strabo therefore singles out Eratosthenes to reject the idea of a temperate zone existing below the equator, which Posidonius and Polybius would have taken from the Alexandrine. What it does not show however is that Eratosthenes had six zones in mind: he simply divided the earth into two hemispheres of similar features, but without the equator having the additional function of dividing the torrid zone in two.

What is very important here is the quality of the source transmitting the testimony. This is one of the basic problems for reconstructing Eratosthenes’ geographic thought. His work has come down to us in a fragmentary condition, and essentially transmitted by Strabo. One example of Strabo’s misunderstanding of Eratosthenes’ conception comes, in all probability, from passages related to book 1 of Geography. Strabo accused Eratosthenes of being too critical of Homer. Instead, Strabo, who was a follower of Crates and the school of Pergamon, attributed all knowledge (including geography) to Homer. In reality, Eratosthenes’ criticism was directed not so much at Homer’s poems (on which the diorthosis of the philologist was expounded, in order to get a better text), but to that pseudo scientific vein that held Homer’s poems to be a sort of encyclopaedia, and useful for the needs of everybody. Although many considered Homer to be the father of all the sciences and referred to his verse to demonstrate the poet’s polymatheia, it was Eratosthenes who compared his own scientific conception of geography with that of Homer’s tales. For the Alexandrine, Homer could not have known the remote places like the Island of Aeolus or the Promontory of the Sirens, while for Strabo, Homer might have indeed conceived the exokeanismos of Odysseus.

In Strabo’s criticism we can detect, at least in part, his incapacity to comprehend the importance of Eratosthenes’ research. This fact is noticeable in
regard to the theories of both Strato of Lampsacus\textsuperscript{42} and Xanthus of Lydia\textsuperscript{43} on the alterations of ground and sea levels. Xanthus, especially, having seen the persistent aridity under Artaxerxes and small seashells in the areas of Armenia, Matiene and Lower Phrygia deduced that the sea must have been much bigger in more ancient times (1.3.4).

Strato then hypothesized that the force of the waters had caused major changes in the terrestrial crust, for both the Black Sea and the Mediterranean had once upon a time been lakes. Their conformation then changed—the fracture of the Mediterranean was caused by the forceful breaking of rivers at the Pillars of Hercules, and the pressure of river waters flowing into the Black Sea caused the fracture of the Pontus Euxinus. These theories were shared by Eratosthenes but criticized by Strabo, who did not agree with the rationale provided by Eratosthenes on water currents, which were caused by the difference in seawater levels on either side. It was the study on the currents in the Strait of Messina, which changed direction twice over a 24 hour period, that drove Eratosthenes to link this inversion to the attraction of the moon, as Pytheas had already done in his hypothesis for oceanic tides. These themes—namely the analysis of oceanic movements and the consequences thereof—created a link between Pytheas, Dichaearchus (who studied the tides at the Strait of Messina) and Eratosthenes, and easily explains why Strabo was so critical of the three geographers.\textsuperscript{44}

Nevertheless, Strabo’s testimony is invaluable for its overall reconstruction of the Alexandrian map. Indeed, the geographer from Amaseia agreed with the framework and defended Eratosthenes vociferously from the attack launched by Hipparchus, who contested it on a geometric basis. Commenting on the drawing of areas considered to be problematic from an Augustan point of view (see, for example, the British Isles) while conserving the general structure of the map, Strabo handed down a reconstruction, albeit a somewhat unreliable one, of Eratosthenes’ Geography. Notably, it is Eratosthenes’ text which, for the first time, actually communicates with its map, thereby offering a scientific description of the entire inhabited world, complete with its contours.

It is likely that after a history of geographical thought and an analysis of the physical geography contained in book I, Eratosthenes might have set down, in book II, the mathematical and astronomical bases that would have

\begin{itemize}
\item\textsuperscript{42} Teacher of Ptolemy II and then successor to Theophrastus as guide to the Peripatus: Wehrli 1950; Aujac 1966, 224–228; 2001, 73–79; Sharple 2011, 14–17.
\item\textsuperscript{43} Contemporary of Herodotus and author of Lydiaka (FGrHist 765). See Aujac 1966, 223–224; 2001, 74–76.
\item\textsuperscript{44} 1.3.12 = Posidon. F 215 EK; see T 79 = FGrHist 746 F6b.
\end{itemize}
consented him to inscribe the inhabited world in one of the two upper quarters of the terrestrial sphere. The reasoning reported by Strabo\textsuperscript{45} is clearly due to Eratosthenes (even though the scientist is not cited explicitly), especially for the reference to concrete elements (see the shape of the terrestrial hemisphere which, without the arctic ice cap, resembles an artichoke, and the shape of the inhabited world is similar to the Macedonian \textit{chlamys}-cloak),\textsuperscript{46} which permitted the delimiting of space to draw up the \textit{oikoumene}.

Book III was essentially focused on the map. In other words, it was an attempt to transfer onto a flat surface the quarter of the terrestrial sphere where the inhabited world was inscribed: the system was founded on pinpointing two Cartesian axes, one drawn from the parallel identified by Dicaearchus,\textsuperscript{47} and the other from the meridian measured by Eratosthenes himself and which crossed the reference parallel at Rhodes. On these two axes rested the Greek cloak-\textit{oikoumene}. The contours of such were outlined, partly as a result of documentation collected and partly by deduction; this can equally be seen for the areas in the northeast and southwest, where the information (see below) was scant. A combination of data extracted from the experience of \textit{periploi} and terrestrial journeys with a geometric division of space guided the drawing of the lines that crossed perpendicularly. In fact, the map was drawn using an orthogonal projection.

There are nine parallels resulting from Eratosthenes’ description: the first, starting from the south, crossed the Country of cinnamon and Taprobane (Sri Lanka), and the others, going northwards, crossed Meroë, Syene, Alexandria, Rhodes, Massalia-Hellespont, Borysthenes, Hierne and lastly Thule, at the extreme north. According to Honigmann,\textsuperscript{48} the concept of the parallel was already associated by Eratosthenes himself with the concept of \textit{klima}, namely a latitudinal band that did not present significant variations of celestial phenomena. The idea of this wide band of 400 stades could even be dated back to Eudoxus, who theorized seven principal \textit{klimata} (Meroë, Syene, Lower Egypt, Rhodes, Hellespont, the Pontus area and, lastly, the mouth of the Borysthenes).

In opposition to this hypothesis, Dicks\textsuperscript{49} held that it might have been Hipparchus who first theorized the astronomical concept of \textit{klima}. In effect,

\textsuperscript{45} 2.5.6 = Erat. F II 11, 27.

\textsuperscript{46} Strab. 17.1.8; Plut., \textit{Alex.} 26.8; Plin., \textit{HN} 5. 62; cf. Diod. Sic. 17.52.3. For the cloak, see Tarbell 1906, 283–289.

\textsuperscript{47} Dicaearch. FF 109–111 W.

\textsuperscript{48} Honigmann 1929, 18–21.

\textsuperscript{49} Dicks 1955, 248–255; 1956, 243–247; 1960, 154–164. See also Berger 1880, 191–192; Thalamas 1921, 239 ff.
the systematic definition of *klimata*, identified by using an arithmetic division of $1^\circ = 700$ stades from the equator to the pole, was discovered by Hipparchus, but our sources also explicitly connect the *klimata* with Eratosthenes: in particular, Ps.Scymnus cites Eratosthenes\textsuperscript{50} for both *klimata* and *schemata*. Even Strabo, who many times cites Eratosthenes and the *klimata*\textsuperscript{51} in the ambit of Hipparchus’ arguments, seems to report faithfully the affirmations of Eratosthenes, when he (Strabo) speaks of a latitudinal band of 400 stades (2.1.35), different from the one of 700 stades, of Hipparchus’ matrix.

Then, the fact that this passage mentions the respective parallels of Rhodes and Athens (clearly derived from Eratosthenes) and then immediately after mentions the “evaluation of the *klimata*” is an argument in favour of Eratosthenes who possibly distinguished the two terms: (1) *parallelo* indicating the parallel of the place, and (2) *klima* indicating the latitudinal band, i.e. the space between two parallels.

As for the measurement of the *oikoumene*, the length ($\mu\acute{e}k\circ\sigma\varepsilon\zeta\varsigma\varsigma\varsigma\varsigma\varsigma$) was calculated by Eratosthenes on individual sections of the reference parallel and estimated at a bit less than 78,000 stades (exactly 77,800),\textsuperscript{52} while the width ($\pi\lambda\acute{a}t\varsigma\varsigma\varsigma\varsigma\varsigma$) was estimated at 38,000 stades: the latter, when compared to the 252,000 stades of the meridian, constituted less than one quarter.\textsuperscript{53}

Regarding length, Strabo aroused criticism especially relating to the figures to come up with a ratio of 2:1 between length and width. The Mediterranean tract—from the Pillars of Hercules to Pelusium—resulted in the number of segments (Pillars of Hercules-Carthage, Carthage-Canopus, Canopus-Pelusium = 23,000 stades) that overlapped the routes possibly already described by Timosthenes. Instead, the Pelusium-Euphrates segment (5,000 stades) followed an ancient trade route: the total tract from the Pillars of Hercules to the Euphrates was therefore 28,000 stades, calculated on a line parallel to the diaphragm of Dicaearchus. On the latter, the length of the terrestrial section was then calculated from Issus, along the Taurus, up to the eastern extreme of the mountain chain, and up to the eastern extreme of the *oikoumene*.

As parallels, the Euphrates-Nile tract (= 5,000 stades: Strab. 1.4.5 = F II C, 18) was equal to the Rhodes-Issus tract: the reasoning which consented the

\textsuperscript{50} Ps.Scymn.150 ff. Eratosthenes is mentioned also in v. 412 on the Peninsula Illica: Marcotte 2000, ad loc.

\textsuperscript{51} 2.1.20 with the controversy of Hipparchus against Eratosthenes, which was contested for the *klimata*, a sign that the Alexandrine had touched on the argument. See also Strab. 2.5.34 = F I I B, 16; Strab. 11.12.5 = F III A, 23.

\textsuperscript{52} Strab. 1.4.5 = F I I C, 18.

\textsuperscript{53} Cf. Strab. 2.5.14.
measuring of unknown segments by means of the known ones—considered parallels—evidently consented to overcoming the difficulties linked to areas where information was lacking.

As already mentioned above, the western section of the map, i.e. the Mediterranean area, was not as long as the Asiatic area, known from the time of Alexander’s great expedition. The Mediterranean remained, in any case, the most documented section, delimited by two parallels and two meridians which, crossing perpendicularly, gave a rectangular shape to “our sea”. The (short) eastern side of this figure was formed by the meridian of Issus and Amisus; and the western one by the meridian of the Pillars of Hercules, a traditional frontier between “our sea” and the ocean.

The definition of the eastern side was, however, contested by Strabo, who polemically observed that the furthest point eastwards had to be Dioscurias, at Pontus Euxinus, and not Issus (2.5.25). Of the other two meridians that then crossed Eratosthenes’ Mediterranean, the one passing Alexandria, Rhodes, and the mouth of the Borysthenes was the reference parallel, clearly constructed on the already cited centrality of Egypt, considered a hub for land routes and seaways.

Instead, the meridian of Carthage, on which the Strait of Messina and Rome\(^54\) were also aligned, is clearly stretched, and the reasons for such may be hypothesized: the Pillars of Hercules-Strait of Messina tract was considered the same as the Carthage-Pillars of Hercules tract (8,000 stades) with the consequent alignment of Carthage and the Strait of Messina. The presence of Rome on this meridian may find an explanation in the fact that the route from the Pillars to the Latium coast via the Bonifacius Strait might have appeared analogous to the Pillars of Hercules-Strait of Messina tract. Moreover, we must take into consideration the role of importance assumed by Rome in the period when the conflict with Carthage had highlighted a polarity destined to become a heavy bearing axis in the history of the Mediterranean. This axis was transformed by Eratosthenes, a spectator of the first two Punic Wars, in stretching the alignment of the two centres on the meridian of the Strait of Messina\(^55\)—a conception that was then overcome by a different idea of the Italian Peninsular, matured by Polybius, and subsequently by Strabo.\(^56\)

As to the method, the above mentioned alignments let us understand that the historic-political importance of some centres might have influenced the

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\(^54\) Strab. 2.1.40 = F III A, 40. See Fraser 1972b, I: 769 for a detailed discussion of Alexandrian knowledge of Rome in the third century BC.

\(^55\) Bianchetti 2013a, 293–314.

selection of the meridians and parallels: they do not differ, in fact, by regular
distances, but underscore, on the map, points of important historic-political
interest.

Opposite the Carthage, Alexandria, Pelusium parallel is the parallel of
Massalia, which was set on the long side of the rectangle i.e. the Mediterranean.
The criticism by Strabo,57 who reproached Eratosthenes for not mentioning
Dioscurias as the eastern extreme of the Mediterranean, allows us to see the
emphasis placed by Eratosthenes on the historic component: “our sea” and
the Pontus Euxinus were deemed a continuous sea for Eratosthenes, who
selected Issus instead Dioscurias due to the role of Issus in Mediterranean history.

As previously mentioned, the eastern section of the map was much more
extensive than the western one in length, and was divided in two by the Taurus
mountain chain that separated northern and southern Asia.58 It is clear that
the function attributed to the mountain chain was an imaginary straight line
running along Dicaearchus’ reference parallel, and contrary to actual geog-
raphy. In fact, the Taurus, according to Eratosthenes, was 3,000 stades wide59
and its western offshoots were north of Issus and the Lycian and Panphilian
coastlines. The information obtained by Alexander’s historians related to the
areas reached by Alexander’s expedition had produced a quantity of data that
enriched not only historic accounts (see Polybius and Arrian), but also geo-
graphic investigations, like those of Eratosthenes, Hypparchus, and Strabo,
even with different viewpoints.

The traces of a hodological interpretation of space, which must have fea-
tured in the historic accounts of Alexander’s companions, are also detected
in the Geography,60 whereas a geometric conception of space prevails. The
tension towards an overall representation of the oikoumene may explain
the particular division of Asiatic spaces. In addition to the two meridians of
Rhodes and Issus, which delimited Anatolia, we find on Eratosthenes’ map the
meridian that crosses the Caspian Sea and the Persian Gulf (see below), as well
as the one superimposed on the course of the Indus river and the two reaching
the eastern extreme of the Taurus and the southern tip of India.

The drawing of the external contours of the oikoumene, but with an autoptic
description missing (excluding the tract from the mouth of the Indus to the
Persian Gulf, explored by Nearchus), was traced theoretically and analogically,61

57 Strab. 1.3.2 = F III B, 93. See Berger 1880, 339–340.
58 On the function of the diaphragm of the Taurus, see Prontera 2000, 99–107.
61 Bianchetti 2012b, 155–171.
by respecting the proportions of an *oikoumene* that extended, north of the equator, up to the arctic circle.

The geometric method, transforming the trend of mountains, rivers, coastlines into lines, consented the drawing of figures called *sphragides*—“seals”, cadastral Egyptian parcels or seals in wax of a ring used to stamp.63

The first of these sections—and a sort of model—was *India*. Its rombooidal shape had the sides outlined by the southern and eastern seas, as well as the Taurus mountain chain and the Indus river. The shape, coming from both the Alexander’s historians and Megasthenes (who drew largely on local sources),64 maintained the proportions imposed by the basic structure of the map: the southern tip of India underwent, for such purpose, a forced rotation eastwards and was imagined by the same latitude as Libya’s southern tip. Therefore, it is clear that the latitude of Libya, fixed north of the equator, produced the unreal analogy between East and West, indispensable in constructing a comprehensive map where large unknown areas are drawn by symmetry and analogy together with the known areas.

The second section was *Ariana*, delimited by the Indus to the east, the Taurus to the north, and the seas to the south and to the west by a line that went from the Caspian Gates to the promontories of Carmania and arrives at the eastern extreme of the Persian Gulf. The coastline of Ariana was drawn based on the account by Nearchus, who was commissioned by Alexander to sail from the mouth of the Indus to Babylonia.65 The text, handed down by Arrian in the *Indiké*, indeed constituted an important source for Eratosthenes, who appears to have constructed upon this section of Asia the eastern part of his map.

If we hypothesize66 that the precise knowledge of the Persian Gulf dated back to Nearchus, and hence the first definition of it as such (with the consequent possibility of hypothesizing the configuration of the Arabian Peninsula, to where Alexander sent his explorers), then we can comprehend the importance of this information, even for outlining of the meridian that Eratosthenes depicted from the Persian Gulf, via the Caspian Gates, up to the “most northern point” of the Asiatic coast.67

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63 See also the terms μέρη, μερίδες, πλινθία in Strabo: Berger 1880, 223; Geus 2007a, 115.
64 Bianchetti 2013b, 77–86. See also Zambrini 1985, 781–833.
65 On Nearchus see Zambrini 2007, 210–220. See also Bucciantini in this volume.
67 Strab. 11.11.7. See Bianchetti 2012b, 155–171.
The Caspian Sea—described as an open sea by the explorer Patrocles by order of Seleucus Nicator—corresponded to the Persian Gulf according to Eratosthenes. Hence, in deciding whether or not this was an open sea, in opposition to the Herodotean tradition of Persian origin, the analogy attributed by the scientist to the position of the two gulfs, one to the south and one to the north of the Taurus, might have played a decisive role.

From the testimony of Patrocles on the possible sailing from India to the Caspian Sea, Eratosthenes deduced the likelihood of sketching the coastline by uniting the mouth of the Caspian gulf with the eastern extreme of the Taurus line, along the 36th parallel. In the testimony, once again criticized by Strabo, who preferred the account of Apollodorus of Artemita, (11.6.4 = FGrHist 779 F 3c), the geographical area including the Taurus, the Caspian Gulf and the Asiatic coast was compared to the blade of a kitchen knife.

This type of comparison was necessary to draw a tract of coastline that was almost unknown and fitted in well with Eratosthenes’ method which, as previously mentioned, relied on real objects (artichokes, cloaks etc.) to describe spaces that were not otherwise easily imaginable.

The importance of the meridian of the Caspian Sea, Caspian Gates and Persian Gulf also results from the function of the tract south of the Taurus in defining the western side of the third sphragis, the south side of which followed the eastern coast of the Persian Gulf (measured along the royal road from Babylonia to Carmania, via Susa), while the western side overlapped the course of the Euphrates, and the northern side overlapped the Taurus chain.

Lastly, for the fourth sphragis we can reconstruct the western side, identified by a line that went from Tapsacos (at Rakka) to Pelusium, and overlapped an important communication route uniting Syria and Egypt.

For the northern half of the map, at least as far as Europe was concerned, Eratosthenes divided it into three promontories projecting southward into the Mediterranean: the first promontory was the Peloponnesus; the second, Italy; and the third Liguria. These three promontories embraced the Adriatic and Tyrrhenian Gulfs. This geographic area of Europe was also a topic on which Strabo sharply criticized Eratosthenes. Instead for Strabo the Peloponnesian promontory was made up of a number of smaller capes.

70 Strab. 2.1.17 = F II A, 10.
71 Strab. 2.1.40 = F III B, 97.
To conclude, we can see, in reference to Eratosthenes’ work and his lack of success thereof, how strongly he was criticized by Hypparchus, who tried to dismantle the geometry of the Alexandrine map. However, Eratosthenes was also attacked by those who did not accept his measurement of the terrestrial circumference (Posidonius and Ptolemy) as well as by historians and geographers (e.g. Polybius and Strabo) who considered geography an instrument to govern the world. But in spite of the harsh criticism, the creation of Eratosthenes’ map was likely kept in Agrippa’s map as well as in Ptolemy’s. With the last geographer of the ancient world, the scientific revolution ended and the Western world would forget the great results achieved by Eratosthenes in Alexandria.
CHAPTER 9

Progress in the Sciences: Astronomy and Hipparchus

Klaus Geus

Introduction

Geography in modern times is a term which covers several sub-disciplines like ecology, human geography, economic history, volcanology etc., which all concern themselves with “space” or “environment”. In ancient times, the definition of geography was much more limited. Geography aimed at the production of a map of the oikoumene, a geographer was basically a cartographer. The famous scientist Ptolemy defined geography in the first sentence of his Geographical handbook (Geog. 1.1.1) as “imitation through drafting of the entire known part of the earth, including the things which are, generally speaking, connected with it”. In contrast to chorography, geography uses purely “lines and label in order to show the positions of places and general configurations” (Geog. 1.1.5). Therefore, according to Ptolemy, a geographer needs a μέθοδος μαθεματική, ability and competence in mathematical sciences, most prominently astronomy, in order to fulfil his task of drafting a map of the oikoumene.

Given this close connection between geography and astronomy, it is not by default that nearly all ancient “geographers” (in the limited sense of the term) stood out also as astronomers and mathematicians: Among them Anaximander, Eudoxus, Eratosthenes, Hipparchus, Poseidonius and Ptolemy are the most illustrious.

Apart from certain topics like latitudes, meridians, polar circles etc., ancient geography also took over from astronomy some methods like the determination of the size of the earth or of celestial and terrestrial distances.1 The mentioned geographers Anaximander, Eudoxus, Hipparchus, Poseidonius and Ptolemy even constructed instruments for measuring, observing and calculating like the gnomon, sundials, skaphe, astrolabe or the meteoroscope.2

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1 E.g., Ptolemy (Geog. 1.3.1–2) mentions an “old” method of determining the circumference of the earth by observing “points”, i.e. stars culminating in the zenith. For a possible connection to Hipparchus see Geus, and Tupikova 2013.
This kind of “astronomical” or “cartographical” geography is to be distinguished from the “descriptive” geography which was pursued by authors like Strabo, Pomponius Mela or Dionysius of Alexandria and which was often called “chorography” in ancient times (e.g., by Ptolemy, as we have just seen).

Between geography and chorography (or between astronomical and descriptive or between geography in the ancient and modern sense) there were not only differences between the requirements like some basic knowledge of mathematics but also in terms of aim, content, method and implementation.

Such differences are very hard to define in detail for the astronomical geography, since the “cartographical” works of Anaximandros, Eudoxus, Eratosthenes, Hipparchus and Poseidonius which would shed some light on this matter, are nearly completely lost. Some doxographical notions and fragments are preserved, but the narrative and historical contexts are normally missing. What's more, authors like Strabo, Mela or Pliny who have transmitted the bulk of information on astronomical geography, did not have a mathematical background. Hence, they often misunderstood and misrepresented the arguments and results of their “astronomical” counterparts or presented them only as “distillates” from second-hand accounts.

Especially controversial is the case of Hipparchus. His geographical treatise, preserved in nearly 70 fragments and entitled Against the “Geography” of Eratosthenes refers to another geographical work, preserved also solely in

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3 Cf. also the titles of the works of Pomponius Mela and Pappus of Alexandria. Recently, the term “chorography” was interpreted differently as either “regional geography” or “picturesque geography”. See, e.g., Marcotte 2007; 2011; Rathmann 2013; Streng 2013, 35; Simon 2014.

4 Strabo’s Geography is an exception only at first sight. Even Strabo could not deny that the geographer needs to have astronomical and mathematical knowledge, though he tried to play it down. Cf. Strabo. 2.1.41; see also 8.1.1 et al.

5 The fact that only Ptolemy’s Geographical handbook has survived as the sole specimen of “mathematical” or “astronomical” geography, would suggest that we need a different categorization of ancient geographical literature. The Berlin TOPOI group has thus proposed the concept of “Common Sense Geography” which classifies spatial literature according to the degree of rationalization the phenomena into “naive”, “canonical” and “(fully) reasoned” geography (see Dan, Geus, and Guckelsberger 2014). For the purpose of this article the traditional distinction suffices.

6 In the authoritative edition of Dicks a fragment transmitted in the “long version” of the Armenian “world-view” (Ašxarhac’oyc’, 1.5) of Mowses of Khoren (according to Hewsen 1992: Ananias of Shirak) and coming from Pappus’ Chorographia oikoumenike is missing. Hipparchus seems to have discussed there the famous lunar eclipse at Arbela 331 BC. See Geus (forthcoming) and below, note 27. Also, we should discard F 41 Dicks (= Ptol., Alm. 1.67.22), since Hipparchus is not commenting on Eratosthenes’ Geographika, but on his treatise About the measuring of the earth here. Cf. Geus 2002, 245–6. Some fragments in Dicks are
fragments. To make things worse, the vast majority of the fragments are transmitted by Strabo who was not appreciative of astronomical geography in general and of Hipparchus in particular.7

Against the background of this problem outlined above, an unbiased evaluation of Hipparchus’ accomplishments in the field of geography should not rely on assessments from ancient authors like Strabo and Pliny, but must try to determine Hipparchus’ aims and methods and place his treatise into the historical development of this discipline.

It is advisable to start with the life and works of Hipparchus.

1 Life and Works of Hipparchus

We know next to nothing about Hipparchus’ life. His native city Nicaea in Bithynia was a cultural centre during Hellenistic and Roman times and he may have received his education there. In this context, it is worth mentioning that two other Hellenistic scientists, interested in mathematics and astronomy, Xenocrates (396–314 BC) and Theodosius (end of the 2nd cent. BC?), hailed also from Bithynia. The observational dates carried out by Hipparchus are attested for the years between 1628 and 126 BC. Hence, we can assume a lifetime between ca. 200 and 120 BC.

Although Hipparchus conducted meteorological observations in his native Bithynia,9 his astronomical observations took place mostly in Rhodes,10 and—probably during a transitional phase only—at Alexandria.11 Since Rhodes is already in his early work on Aratus the central geographical reference point, Hipparchus emigrated from Nicaea to Rhodes in his younger days.

Hipparchus was quite a productive author who even compiled a catalogue of his own works (Ἀναγραφὴ τῶν ἰδίων συνταγμάτων) at the end of his life. We know of 15 titles:12
dubious (e.g. F 63). I will try to show this more fully in my commented edition in FGrHist v (Geus. Forthcoming).

8 161 BC according to Rehm 1913, 1666.
9 Ptol., Phas. 67.10 Heiberg (confirmed by Aelian., De anim. 7.8; see also CCAG V 1, p. 204.8), but cf. Rehm 1913, 1666.
10 Jones 2013, 3222.
11 Ptol., Alm. 3.1 p. 196.
12 I give a revised and enlarged list of the titles, basically according to the chronological order established by Dicks 1960, 15, with some modifications (see the circumspect evaluation of the sources by Rehm 1913).
About the treatise on chords in a circle, in twelve books (Περὶ τῆς πραγματείας τῶν ἐν κύκλῳ εὐθειῶν βιβλία ιβ’).

Treatise on simultaneous risings (Ἡ τῶν συνανατολῶν πραγματεία).

On the rising of the twelve signs of the zodiac (Περὶ τῆς τῶν ιβ’ ζῳδίων ἀναφορᾶς).

Commentary on the “Phainomena” of Aratus and Eudoxos (Τῶν Αράτου καὶ Εὐδόξου Φαινομένων ἐξηγήσεως).

Against the “Geography” of Eratosthenes (Πρὸς τὴν Ἐρατοσθένην ἐρατοσθένους γεωγραφίαν).

In objects carried down by their weight (Περὶ τῶν διὰ βαρύτητα κάτω φερομένων).

On the displacement of the tropical and equinoctial points (Περὶ τῆς μεταπτώσεως τῶν τροπικῶν καὶ ἰσομερινῶν σημείων).

On the length of the year, one book (Περὶ τοῦ ἐνιαυσίου μεγέθους ή διὰ βαρύτητα περὶ τοῦ ἐνιαυσίου μεγέθους βιβλίον έν).

On the length of the month (Περὶ μηνιαίου χρόνου).

On Intercalary Months and Days (Περὶ ἐμβολίμων μηνῶν τε καὶ ἡμερῶν).

On the size and system of the fixed stars (Περὶ μεγέθους καὶ συντάξεως τῶν ἀπλανῶν).

On the motions of the Moon in latitude (Περὶ τῆς κατὰ πλάτος μηνιαίας κινήσεως).

Parallax (Παραλλακτικά).

On the sizes and distances of the Sun and Moon (Περὶ μεγεθῶν καὶ ἀποστημάτων ἥλιου καὶ σελήνης).

Catalogue of own works (Ἀναγραφή τῶν ἰδίων συνταγμάτων).

But Hipparchus seems to have written other treatises on certain topics of astronomy (planetary theory? About solar eclipses and the seven climata?), meteorology (parapegmata?), astrology, mathematics (number theory?) and optics, even if we do not know the exact titles of the works. Considering the specific topics and questions touched upon, one may imagine that the dissemination of his books—with the possible exception of his Commentary on the “Phainomena” of Aratus and Eudoxus—was quite limited. Ptolemy seems to have had difficulties in obtaining all the works of Hipparchus at Alexandria.

One point deserves particular mention: The Byzantine lexicon Suda devotes a whole lemma to Hipparchus and calls him a “philosopher”, an honour which the same lexicon does not even bestow on the mathematician Archimedes and which shows that Hipparchus was not considered only an expert astronomer in antiquity.

13 Strab. 2.1.41 (shortened at 1.1.2: Πρὸς τὴν Ἐρατοσθένην).
14 Ptol., Alm. 3.207.12.
15 Ptol., Alm. 9. 2 and 3; Achill., Isag. Arat. 47.18 Maass.
The main features of his works are scathing, sometime pedantic critiques on his predecessors and the refusal to accept theories and hypotheses which are not based on mathematical principles and/or accurately observed data. In this regard, one may call Hipparchus a modern scientist according to Karl Popper's standards.

Most of his works concern problems of astronomy. Among them is the only one preserved today, a commentary on the astronomical didactic poem of Aratus (ca. 310–245 BC), the *Phainomena*. At length, Hipparchus discusses and criticizes there the astronomical theories of this Hellenistic poet, who drew on an older work of Eudoxus of Cnidus (ca. 395–340 BC). For example, Hipparchus corrected the geographical latitude of Athens (37°), and especially Aratus' statements on the parts of the zodiac and on simultaneously rising and setting constellations ("paranatellonta"). He also published a catalogue of fixed stars, which he produced for the latitude of Rhodes (36°). Finally, attached to the work was also a repertoire of important single fixed stars, by which everyone is able to infer the 24 (equatorial) hours of the day.

The catalogue of fixed stars given in this *Commentary* is not to be confused with another star catalogue, which is now lost but was praised lavishly by ancient writers. In contrast to his predecessors Eudoxus and Eratosthenes, Hipparchus was the first to express the position of stars not in the traditional pictorial way, i.e. relatively (*e.g.*: "The lion has a bright star on the left pawn"), but absolutely by means of a mathematical coordinate system. The consensus is that this catalogue comprised of ca. 850 stars. It was only slightly smaller than the one we find later in Ptolemy's *Almagest* and which names 1022 stars.

Another astronomical work, entitled *On the displacement of the tropical and equinoctial points* (*Περὶ τῆς μεταπτώσεως τῶν τροπικῶν καὶ ἰσημερινῶν σημείων*), contained Hipparchus’ most important discovery, the precession of the equinoxes. Hipparchus noticed that the earth not only rotates around its axis (or, in Hipparchus’ case, that the heavens rotate around the earth, since he adhered to the geocentric world view), but that the earth’s axis itself gradually shifts in orientation like a spinning top over the span of millennia. Hence, the apparent North Pole of the firmament is constantly moving. The star at the north pole, Polaris, has changed its place several times and is now different from the one in Greco-Roman times. Hipparchus made this discovery in the year 128 BC at the end of his life.

Ptolemy informs us that Hipparchus found the precession of the equinoxes by checking the observations of the astronomer Timocharis (ca. 300 BC). This attests to Hipparchus’ rigour who attached importance to accurate data. While compiling his catalogue of fixed stars he even found a hitherto unknown star. Alexander von Humboldt identified it with a nova in the constellation of
Scorpio, which was also observed by Chinese astronomers. Hipparchus drew the right conclusion from his discovery, one that sounded revolutionary and heretic to ancient ears, namely that fixed stars are not really fixed but change over the course of time.

Like his successor Ptolemy, Hipparchus too was interested in astrology, especially in astrological geography. This branch of “science” brought into relation the twelve signs of the zodiac or the seven “planets” with certain regions or countries. For example, Hipparchus and the “old Egyptians” put Babylonia, Thrace, Armenia, Southwest Arabia, Persia, Cappadocia, Mesopotamia, Syria and the Red Sea under control of the zodiacal sign Aries. In another, albeit dubious testimony, Hipparchus linked the Sagittarius (Τοξότης) with Crete, Sicily, Italy and Iberia.

There is little reason to deny Hipparchus these (and other) astrological fragments. We cannot exclude the possibility that later astrologers tried to make use of Hipparchus’ fame and authority for their own purposes and published their own ideas and works under his name. But as the ancient tradition shows, the fact that Hipparchus was an astrologer is beyond doubt.

2 Geography

It was not only his interest in astrological geography which prompted Hipparchus to occupy himself with geography in the narrower sense. He was eager to verify astronomical observations by accurate surveying of the observation posts. Hipparchus was not interested in descriptive geography in the vein of Strabo. As far as we know, he aimed only at astronomical geography.

Wolfgang Hübner (2000, 97) even hypothesized that Hipparchus did not want to write a geographical treatise in the first place, but felt compelled to do so when he engaged himself with the data and especially the errors and shortcomings of his predecessors. And he may be right here.

We know of only one geographical work of Hipparchus, entitled Against Eratosthenes or, more accurately, Against the “Geography” of Eratosthenes. This treatise of the Alexandrian polymath was considered the standard work in the field of geography, much like Aratus’ Phainomena in the field of astronomy.

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17 Hephaest., Apotelesm. 1.1.7.
Every scientific discussion at Hipparchus’ time had to be about the premises and results of Eratosthenes’ work.19

Like Eratosthenes’ Geography, Hipparchus’ “refutation” must be reconstructed from Strabo’s testimony in the theoretical books 1 and 2 of his work. The somewhat pedantic criticism which Strabo put into Hipparchus’ mouth, may do justice to the overall flow of his work. In fact, Hipparchus treated Aratus and Eudoxus in the same way. But the preserved fragments make it clear that Hipparchus tried neither to condemn everything Eratosthenes proposed nor to replace Eratosthenes’ geographical system with his own. Rather, Hipparchus’ criticism aimed mostly at particular cartographical aspects of Eratosthenes’ geography and hence “only” at the mainstay of geography, cartography. Whenever Strabo has Hipparchus say things which have nothing or not much to do with cartography,20 we can assume that Hipparchus was either prompted by statements in his Eratosthenian Vorlage or Strabo’s selection concerns especially such kind of passages.

Like the work of his predecessor, Hipparchus’ own treatise consisted of three books and showed a close similarity in composition.21 Basically, Hipparchus’ work was a commentary on Eratosthenes from an astronomical point of view. This opinion is confirmed by Strabo (2.1.41 = test. F Dicks):

Therefore, for Hipparchus who was not writing a geographical treatise, but was making a critical examination of the statements made by Eratosthenes in his Geography, it would have been fitting for him to have gone into further details of correction.

In the first book Hipparchus started with the history of geographical research (γεωγραφικὴ ἐμπειρία),22 beginning, unlike Eratosthenes, with Homer. For this, Strabo paid him a big compliment, somewhat undeserving in a modern view.23

Next, Hipparchus argued against the view of an all-encompassing ocean or an “Atlantic sea” (as Eratosthenes had it) which surrounded our oikoumene.24 In this context he revived the age-old error of the two mouths of the Danube

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19 At the time Cicero had the idea of writing a Geographika, he wanted to emulate Eratosthenes as a master model. Cf. Cic., Att. 2.6.
20 E.g., according to Strab. 1.3.15 = F 9 Dicks, Hipparchus advanced historical arguments; see also Strab. 1.2.20 = F 3 Dicks.
21 But see Rehm 1913, 1678.
22 Strab. 1.1.2 = F 1 Dicks; ἀρχηγέτην εἶναι τῆς γεωγραφικῆς ἐμπειρίας.
23 Strab. 1.1.2 = F 1 Dicks; 1.2.3 = F 2 Dicks; 1.2.20 = F 3 Dicks.
24 See Strab. 1.1.12 = F 11 Dicks.
emptying into both the Pontus and the Mediterranean. This and other examples show that Hipparchus’ knowledge in geography or, in a more modern sense, in regional studies was quite limited.

In the first book he also turned to the question, whether other oikoumenai in addition to the three traditional continents Europe, Asia and Africa (“Libya”) can be found on the surface of the earth. He seemed to make the case that an “anti-oikoumene”, i.e. an oikoumene in the south of the equator, begins at the big island of Taprobane (Sri Lanka).

Finally Hipparchus rejected Eratosthenes’ method of calculating the size of the oikoumene by simply adding up known terrestrial segments. In contrast, Hipparchus asked for an astronomical determination of all places in order to produce an accurate world-map. In principle, he demanded to observe and calculate the latitudes via measuring the heights of the gnomon and its shadow, or via determining the ratio between the longest and shortest day, or via measuring the culmination points of fixed stars.

It is difficult to ascertain to what extent Hipparchus himself realized his own theoretical demands. According to an account of Strabo Hipparchus subscribed to the old measurement of Pytheas of Massalia, who claimed that Byzantium and Massalia lie on the same latitude, despite Byzantium being in fact more than two and a half degree to the south. Other errors, which we can hardly credit to a pedantic observer like Hipparchus, make us believe that his famous table of latitudes was not produced as a series of actual observations (either carried out by Hipparchus or any other geographer)—such a mission was surely impossible in ancient times—but rather a compilation and a probability evaluation of older observations. At any rate, the trust in Hipparchus induced later geographers, among them Ptolemy, to accept his observational data and hence the latitudes of important cities without much reservation.

For the determination of the longitudes, which was an insolvable problem due to the non-existence of synchronized clocks in ancient times, Hipparchus made the proposal to use observations of lunar eclipses or star occultations taken at two different places whose mutual distance is known. The temporal difference between the two observations allows calculating the so-called meridian distance, i.e. the longitudes of the places. As ingenious as Hipparchus’ proposal was, the rarity of such observed (and recorded) phenomena made this method an exception in the history of cartography. The ancient lists of

25 Strab. 1.3.15 = F 10 Dicks.
26 Strab. 1.4.4 = F 53 Dicks; 2.5.8 = F 54 Dicks.
27 The famous lunar eclipse of 20 September 331 BC, observed at Arbela and in Carthage (cf. Ptol., Geog. 1.4.2; Plin., HN 2.180; Arr., Anab. 3.7.6), as a means of determining the longitudes was attributed to Hipparchus by Pappos of Alexandria (see, above, n. 6).
ἀντικέιμενοι τόποι, i.e. places lying at the same meridian, were not established through astronomical observations but by estimations of voyages and routes in the north-south direction.

In the second book Hipparchus subjected Eratosthenes’ “seals” (σφραγίδες), basically geometric and simplified images of larger regions and countries, to such harsh criticism that he eliminated nearly every trace of them in our memory of geographical thought. Strabo rushed several times to Eratosthenes’ defence and emphasized that mathematics should be kept away from geography. But he ignored the fact that Eratosthenes’ seals were basically geometric features. Inasmuch, the criticism of Hipparchus was sound. He checked every single seal trigonometrically by constructing triangles with important points, whose sides and positions Eratosthenes had determined by terrestrial distances.

In particular, Hipparchus turned against the prolongation of the “Taurus”—a long mountain range—in the eastern direction which started as part of the so-called “diaphrama” at the Pillars of Heracles and went on to Sardinia, Sicily, Attica etc. till East Asia. Also the shift of India to the south which Eratosthenes advocated was criticized by Hipparchus. With the last point, Hipparchus went over the top since he dismissed the younger and improved map of Eratosthenes for the older Ionian (Eudoxian?) world-maps. The fact that Hipparchus played these maps off against the Eratosthenian one and advised to use only the former, shows more his dissatisfaction with the seals system of Eratosthenes than a conservative attitude in cartography.

In the third and last book of his work Hipparchus went into detail of the famous measurement of the earth of Eratosthenes. Being an astronomer, he accepted Eratosthenes’ approach to determine the circumference of the earth.

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28 Strabo’s testimony for Hipparchus’ criticism of the “seals” points to the third and fourth seal, but as can be inferred from a certain passage (2.1.40 = F 29 Dicks (μεταβαίνει πρὸς τὰ βόρεια μέρη τῆς οἰκουμένης; see also Strab. 2.1.41 = F 33 Dicks), he applied it to the other seals, too.

29 Hipparchus is considered the founder of trigonometrical astronomy. See, e.g., Muris, and Saarmann 1961, 25.

30 McPhail, and Hannah 2011–12.

31 For these πίνακες ἀρχαῖοι see recently, Prontera 2014 (with the older secondary literature, especially Prontera 1997), who shows that Hipparchus’ requested modifications would have destroyed Eratosthenes’ net.

32 Strab. 2.1.4 = F 12 Dicks; 2.1.11 = F 14 Dicks; 2.1.21–2 = F 19 Dicks; 2.1.34 = F 24 Dicks; 2.1.38 = F 28 Dicks.
(250,000 or 252,000 stadia), but criticized heavily some instructions which he deemed mathematically ambiguous or illogical (cf. FF 36, 36, 39 Dicks).³³

But his main goal in this book was to construct a grid or web of the earth. Eratosthenes has made use of only a handful of latitudes and meridians for drawing his map, which were defined by important cities and landmarks of the oikoumene. These latitudes and meridians were still drawn at irregular distances. Now, Hipparchus constructed a theoretical grid of parallels ranging from 0 till 90° N, i.e. from the equator to the North Pole. He placed few cities into it which he had either measured himself or thought of their coordinates as correct. According to Strabo, he even calculated the celestial phenomena which happen there. In addition to the already mentioned measurements with the gnomon or according to the length of the day, he provided data for the apparent συνανατολαί or συγκαταδύσεις and culminations of stars³⁴ and the “eternally visible circle” (ἀεὶ φανερὸς κύκλος, i.e. that of the circumpolar stars). For his geographical tables Hipparchus seems to have taken his readings directly from a globe, as he had probably also done with his catalogue of fixed stars. Such a procedure needs no calculating and can be done easily and swiftly.

The centre of his grid was, much like that of Eratosthenes, Rhodes, more exactly the mountain Atabyrios in the middle of the island. Since Hipparchus knew of only a limited number of astronomically determined places, he refused to draw a new map of the oikoumene. Although Hipparchus tried to be careful when he took over data from his predecessors, he nevertheless fell for wrong information and errors in some cases. As mentioned above, he accepted Pytheas’ wrong determination of Massilia and Byzantium as lying on the same latitude.³⁵ This shift causes many linked places to “glide” to the north. As a consequence, India was put too far to the north in Hipparchus’ concept. He followed the older maps of the Ionians here instead of accepting the better one of Eratosthenes.³⁶

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³³ According to Pliny the Elder (HN 2.108 = F 38 Dicks; note on p. 153) Hipparchus added 26,000 stadia to the number of Eratosthenes for the circumference of the earth, i.e. 278,000 (or 276,000). This is difficult to interpret. According to one modern view Hipparchus tried to find a compromise between the number of Eratosthenes and the “traditional” number 300,000, according to another, Pliny confused two statements, i.e. that the circumference at the equator is 4 × 63,000 stadia (cf. Strab. 2.5.7) and that the north-south extension of the oikoumene amounts to 38,000 stadia. Cf. Campbell 1936, 91. Both explanations are unsatisfactory.

³⁴ Strab. 1.1.21 seems to belong in this context.


³⁶ Shcheglov 2005 advanced a rehabilitation of Hipparchus in this regard. He is surely right in pointing out that Strabo misrepresented Hipparchus quite often. But Hipparchus’ advice
Other examples for the application of wrong data concern the latitude of Athens (here Hipparchus followed Eratosthenes who underestimated the distance between Rhodes and Athens)\(^37\) and the already mentioned\(^38\) curious claim that the Danube flows into both the Pontus and the Mediterranean.

3 Conclusion

Evaluating Hipparchus’ accomplishments poses some difficulties. The effusive praise bestowed on Hipparchus in ancient and modern times can be confirmed to a large extent, but must be nuanced in the field of geography, which was clearly not Hipparchus’ favourite subject. His demand for an abstract grid of coordinates, based on astronomical data, was surely novel but could not be fulfilled by himself. Since Hipparchus had no immediate disciple or follower—neither in astronomy nor geography—the ways he paved were trotted again only centuries later. In recent research, it has become more and more apparent that Claudius Ptolemy was dependent on his ingenious scientist not only in his *Almagest* but also in his *Geographical handbook*.\(^39\) Hipparchus had the bad luck to live in a period when academic institutions like the Museion in Alexandria (due also to political circumstances) tumbled into crisis and mathematical geography attracted no interest at other centres like Rome. Quite telling is the anecdote that the Roman emperor Marcus Antoninus (ruled 138–61 AD) punished the inhabitants of Nicaea because they had forgotten their famous compatriot Hipparchus.\(^40\)

\(^{37}\) Cf. FF 18, 50 Dicks; see also Hipparch., *In Arat. 1. 4. 8*, on this Dicks 1960, 177.

\(^{38}\) See above 156–157.

\(^{39}\) See recently Shcheglov 2014, 79–81.

\(^{40}\) See Aur. Vict., *De Caes. 41.20*; and Pekáry 1993.
B. The Thought of the Farthest Horizon in the Greek and Roman Tradition
CHAPTER 10

The Indian Ocean from Agatharchides of Cnidus to the Periplus Maris Erythraei

Didier Marcotte

1 The Erythraean Sea and the South in Greek Geography and Ethnography

The name “Erythraean Sea” covered far more than what we know today as the Red Sea, designating not just the gulf sandwiched between the Egyptian and Arabian coasts, but also the area extending from the Horn of Africa in the west to Cape Comorin and the Bay of Bengal in the east. Even in its earliest attested uses in the Classical period, it was clearly a generic term, in that it also served to designate the gulfs surrounding the Arabian Peninsula, and the Arabian Sea separating that peninsula from the Malabar coast.1 Greek historians therefore perceived this maritime space as a single unit. This notion of unity is further borne out by the titles of two geographical works: On the Erythraean Sea, a treatise written by Agatharchides of Cnidus, in the 2nd century BC,2 and the Periplus Maris Erythraei, by an anonymous author living in the first decades of the Principate.3 These two accounts differed considerably, both in nature and in purpose, for while the former was produced by an official working in the Alexandrian chancellery, under Ptolemy VI Philometor (181–145 BC) and Ptolemy VIII Euergetes II (169–116 BC),4 the latter appears to have been written by a Greek living in Egypt who probably engaged in trade with India.5 However, setting aside these differences, both works, in their own way, confirmed the idea that the Indian Ocean could be regarded as a single entity. Whereas the

1 Collected sources on the name in Sidebotham 1986, 182–186.
4 Testimonia in FGrHist 86; biographical data discussed in Burstein 1989, 12–18; Marcotte 2001, 391–399.
5 Casson 1989, 6–10. On the date, see below n. 4.
unity of the Mediterranean was evident to ancient historiographers from a very early time, the morphology of the Erythraean Sea and the diversity of the cultures to be found along its shores made this a less obvious conclusion to draw.

The unity of the Erythraean Sea nonetheless appears to have been taken as a fact by the period of Persian domination. It was Darius who first had its coastline reconnoitred, supposedly confiding this mission to Scylax of Caryanda, before undertaking his Indian campaign in the late 6th century BC. According to Herodotus (4.44), our only formal witness to this expedition, the Greek seafarer set off from the mouth of the Indus and eventually reached Egypt, after circumnavigating the Arabian Peninsula. The information he brought back with him may well have had a direct influence on the sovereign’s policy of expansion, especially to the east; it also appears to have given the Achaemenid a better idea of how far his empire extended and how it all fitted together. While the Persian Empire had a clearly continental vocation, the sea that lapped the shores of its most far-flung satrapies clearly served not to separate but to connect them. The two most distant lands, India and Aithiopia, which faced each other across the sea’s southern waters, thus defined the extent of the Achaemenid Empire. Although India was never fully subdued by the Great King, any more than Aithiopia was, despite the campaigns that Cambyses II wanted to undertake south of Egypt, these regions nevertheless represented the farthest extent of his hegemonic ambitions, as well as the twin southern limits of the known world.

About Scylax, Herodotus concludes: “After the men [of Scylax] had completed this voyage, Darius conquered the Indians, and made use of the sea (echrato) in those parts. Thus all Asia, except for the eastern portion, was found to resemble to Libya.” He did not elaborate on the similarities between Asia and Libya, but we can assume that the presence of “Aithiopians” was the most remarkable feature as far as he was concerned, as it was for ethnographers. Here and there, we come across references to likenesses between the fauna, and even between the hydrography of the great rivers, but it was Alexander and his successors who drew attention to the common features of the Indian and Nilotic worlds. Indeed, their reasoned comparisons were to form the basis of climatology, for the principles and methods of this science can be traced back

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6 On the record of Herodotus, see Salles 1988, 79–86.
8 So in the inscriptions from the Achaemenid period: e.g. Schmitt 2009, 98–99 (DHa); see also Karttunen 1989, 32–33; Schneider 2004, 376–378, and below Chapter 11.
to the Museum’s scholars and their analyses of the physical and human characteristics of the lands flanking the Erythraean Sea.  

It was precisely these two aspects that Agatharchides tackled in his treatise, his stated aim being to cover all the countries and peoples in the south of the inhabited world. This space, which he referred to simply as τὰ πρὸς μεσημβρίαν (F 64), gave him enough material for five books, where ethnography and natural history were closely intertwined. Most of what we know about this work comes from Diodorus and Strabo. In Book 3 of his Bibliotheca historica, Diodorus (3.11–48) quotes lengthy passages from Agatharchides about the Aithiopian peoples and the lands of the Upper Nile, the regions between the Nile and the sea, as well as the opposing coastline of the Arabian Gulf, stretching from the latitude of Arsinoe (F 80) to the region around the straits of Bab al-Mandab (F 39: ta stena; 79). These pages, which frequently reflect a profound and sustained interest in the study of humankind and its environment, find a faithful echo in Photius’ Bibliotheca, where an entire codex (cod. 250) preserves extracts from Agatharchides’ Books 1 and 5. Together, Diodorus and Photius reveal the full extent of the Cnidian’s ambitious undertaking. He intended to describe the ethnic components of the entire area between the Nile corridor and the Indian subcontinent in one fell swoop, adopting the comparative approach assumed by Herodotus and attempting to illustrate the identitary features of the mesembria. In Eratosthenes’ map of the world, this space roughly corresponded to the southeast quarter of the oikoumene. We can surmise that the aim of the treatise was to present the Erythraean Sea as the physical feature around which all the regions of the southern world were organized, and to use it as a pretext for studying each of these regions in turn.
In his Book 1, which has come down to us solely through Photius and Strabo (F 1–20), Agatharchides described the Erythraean Sea as a geographical and climatic space, following the Alexandrian conception. The name of the sea gave rise to a remark on its etymology (F 1–6), which was an opportunity for the author to reject altogether mythological aitia, and to express a principled objection to any combination of mythographic writing and historical narration (F 7). The figure of the Aithiopian was then introduced via a moralizing and exhortatory discourse spouted by a counsellor to a young Ptolemy (F 12–18), which was modelled on Herodotus (see below 3). We can surmise that the Ptolemies’ interest in elephants, and the campaigns they led against the Aithiopians, were juxtaposed somewhere in Book 1 (so in F 9; 19–20). A description of Ptolemais Therōn, a coastal trading post or elephant hunting station, provided a pretext to talk about the black populations living inland from the Arabian Gulf (F 84).15

Originally, Agatharchides had planned to produce a proper ethnography of the African Aithiopians, with three separate sections corresponding to three different geographical areas, according to the division adopted by Diodorus (3.11.4): (i) the Aithiopians living on the banks of the Nile and in the region of Meroe,16 (ii) the continental Aithiopians living in the deep South (Book 5, F 50–60), and (iii) the groups living in the area between the Nile and the Red Sea, notably the Ichthyophagi and the Troglodytae (or Trogodytae). After an introductory note on the use of pathos by the historian Hegesias (F 21 = FGrHist 142 T 3 and F 6–17), the extant fragments of Book 5 first describe the life of the slaves in the gold mines of the Nubian Desert opposite Dakka (F 23–29). The Ichthyophagi (or Fish-Eaters), a human type said to inhabit both sides of the Erythraean Sea,17 formed the subject of one of the longest (and most carefully nuanced) descriptions in Book 5 (F 31–49), leading the reader from Carmania and Gedrosia (F 31) to the Arabian Gulf. For Agatharchides, the Ichthyophagi and the Troglodytae, the last people to be studied in Book V,
were prime examples of paradoxical societies, but this did not prevent him from describing them with humanity, if not compassion. According to an extract provided only by Photius (F 49), the former were completely untouched by the Greeks’ taste for superfluous things. They themselves desired only the bare necessities, and as they needed little, they suffered little. While he certainly did not vaunt the merits of want or privation, Agatharchides did use the Fish-Eaters as a pretext for depicting a social and natural order in which asceticism was something positive, adopting a reasoning that probably owed to the Cynics’ or the Epicurean’s teaching.\textsuperscript{18} This population was also hostile to the notion of servitude and had no written laws, but despite the absence of moral concepts (\textit{ennoiai}, F 31; 40), they were capable of displaying nobility of sentiment (\textit{eugnomonein}, F 49). Agatharchides’ description appears to have been dictated by a well-defined ethical programme, and included a critique of civilizations governed by the laws of appropriation.\textsuperscript{19} We can therefore interpret the tacit mutual non-aggression pact between the Ichthyophagi and the seals (F 42) as implicitly representing (in the apologist’s mode) the diametric opposite of real-life neighbourly relations.

The Troglodytae (F 61–63), the southernmost coastal people, lived in a pastoral society, sharing its women and children in a lifestyle reminiscent of utopian literature. According to one of their customs, any individual who was incapable of following the flocks had to commit suicide by strangling himself or, if he felt unable to perform such an action, the first person who came along to do it for him (F 63). This \textit{nomimon}, which stood out on account of what Diodorus (3.33.7) described as its “strangeness and disconcerting aspect”, gave rise to a discussion about the contrast between the extreme North and the extreme South, both places of paradox. The following comparison of the Scythians and the Troglodytae (F 65) may have taken up where the author of \textit{On Airs, Waters, and Places} left off, in a passage contrasting the Egyptians with the Scythians that has not survived,\textsuperscript{20} but in it, he emphasized the principle of man’s universal adaptation to his environment, and, unlike Hippocrates, did not make any moral judgments.

The ethnography in Book 5 ended with a return to our Red Sea, which was clearly perceived as the axis of the southern world.\textsuperscript{21} Agatharchides described first the African coast from the Gulf of Suez (Arsinoe) to the Straits of Bab al-Mandab (F 79–84), than the east coast, from the Aqaba Gulf to the Sabaean

\textsuperscript{18} For the significance of \textit{chreia} in Greek ethnography, Spoerri 1959, 144–148.
\textsuperscript{19} See Gabba 1974, below n. 31; Dihle 1994, 86–89.
\textsuperscript{20} Hippoc., \textit{Aer.} 12. 6–7; Jouanna 1996, 299–300.
\textsuperscript{21} For this representation of the Red Sea, see Desanges 1999, 294–295.
kingdom (F 85–103). In between their forays into the peripheral regions, Books 2–4 also undoubtedly returned to this sea at regular intervals, in an alternating centrifugal and centripetal movement. The mesembria thus defined extended from the confines of India and Persia to those of Aithiopia and Libya, encompassing all the lands that Herodotus (4.39–41), when referring to Darius' empire, had described as being bathed by the Erythraean sea. This spatial freedom may have allowed the author to include a swift mention of Libya and a description of Arabia. These detours were the expression of the author’s refusal to adopt a periegetic method, while at the same time allowing him to assert in Diodorus 3.38.1 (F 79), that by the time he returned to the Arabian Gulf for the last time, he had taken in all the coasts of the Erythraean Sea and even the southern parts of the so-called Atlantic Ocean.22

The two prologues of Books 1 and 5 (only in Photius) provide ample evidence of Agatharchides’ aesthetic ambitions and show that he belonged to a long line of prose writers, whose chief proponents were Duris of Samos (FGrHist 76) and Phylarchus of Athens (FGrHist 81), whose tragic bent was highlighted by Polybius.23 Although he did not resort to empty rhetorical flourishes or cultivate a mannered style as Hegesias had done, Agatharchides nonetheless represented a brand of historian who strove to move his readers through an almost pictorial description of the facts. Photius clearly grasped this, characterizing the pages that described the fate of the slaves working in the gold mines of Wadi Allaqi as “tragic drama” (F 24)24 Like the Alexandrian scholars, Agatharchides also expressed a systematic distrust of poetry, viewing it as an unsuitable vehicle for teaching. Accordingly, much of the criticism of myths, in his long prologue to the reader in Book 1, was based on the conceptual opposition set up between didaskalia and psychagogia by the Museum’s scholars. Historians, he maintained (F 8), had to check their facts and conduct responsible investigations. In these chapters, Agatharchides, adopting the playful tone of the paigion, used his critique of myths as a pretext for taking his readers on a whistle-stop tour of the ancient tales about the origins of the peoples, city states and lands of Libya, Asia and Europe.25

Given the subject he had set himself, Agatharchides necessarily inherited the concepts of Hellenistic anthropology. The account of the Ichthyophagi’s

22 See above n. 10.
23 In this respect, see Walbank 1960. Phylarchus was cited by Agatharchides in his On Asia, Book 7 (FGrHist 86 v 3).
social life and their indifference to “additional pleasures” also reveals his knowledge of Epicurean theses, even if he did not adhere automatically to them: the language employed by ethnographers and sociologist-historians in the 3rd and 2nd centuries BC was a mixture of both Aristotelian and Epicurean features. In his famous dissertation on the major trends in ancient historiography, Hermann Strasburger introduced a dichotomy between “kinetic” history, dealing with military and political events, and “static” history, dealing with culture. Thucydides exemplified the former and Herodotus the latter. Strasburger demonstrated that the Herodotean model was neglected until Agatharchides, followed soon after by Posidonius. The two historians had in common an interest in the study of man in society and of animal in its natural habitat, a tendency to focus less on a country’s resources and more on their technical exploitation, and an openness to the physical sciences, especially meteorology. In their eyes, in short, human history and natural history were but one. Even so, these shared features should not mask some fundamental divergences, not least in the ways they interpreted climatic contingencies. For while Agatharchides regarded synetheia (“custom, practice”) as a counterweight to environmental constraints (F 66), Posidonius radicalized the climatic theory and used it to explain the physical properties of different places and the ways of life of the peoples that inhabited them.

The Ptolemies’ African policy also came in for criticism from time to time. Examples that spring to mind include the workers who were reduced to slavery in the gold mines by what was described as a tyrannical power (F 24: tyrannnis), and the unfavourable elephant-hunting regulations that the Ptolemies sought to impose on the populations living in the hinterland (F 56). Similarly, Emilio Gabba viewed the description of the happy and prosperous Sabaean kingdom in Southern Arabia as an attack on Roman imperialism (F 102). He further interpreted Agatharchides’ comment that the Sabaean capital only continued to escape the covetous eye of the outside world because it was so far inland as highlighting the threat that Rome posed to the region’s smaller

27 Strasburger 1966.
28 Since Reinhardt 1921, 22–24, Agatharchides has been recognized as one of the possible sources for Posidonius’ description of the mines of Turdetania in Southern Spain (F 239 E K).
29 Strasburger 1966, 90.
30 The concept features in Diod. Sic. 3.34.6 (F 66), but also in 3.10.6 (according to Agatharchides, On Asia, Book 2); see Cole 1967, 82.
32 Gabba 1974, 638.
states. Even so, neither Photius nor Diodorus quotes a single instance where the author expressed outright condemnation of any hegemonic power, be it Roman or Ptolemaic. At most, they provide us with cold, realistic and even poignant descriptions dictated by a concern for **enargeia**\(^\text{33}\) and which are all the more compelling for not being explicitly polemical. For a prime illustration of Agatharchides’ determination not to emulate Hegesias’ linguistic excesses, we must return to his note on the so-called “apathic” Ichthyophagi (\(F\) 41): when Simmias, one of Ptolemy III Euergetes’ *philoi*, was sent by the king to the area of the Bab al-Mandab strait,\(^\text{34}\) he found the natives there to be unafraid of strangers and insensitive to the torture that was inflicted on them. In his analyses of both the Fish-Eaters and the mistreated miners, Agatharchides exhibited a clear determination to lend the same historical dignity to the drama of the common people, as to the military feats of the Ptolemies. The particular attention he paid to societies that had remained undisturbed by the movement of history reflected his desire to treat them in a Herodotean manner, which Domenico Musti calls the “homogenisation” of historical discourse.\(^\text{35}\) According to this notion, any city, be it large or small, and any people, be it victor or vanquished, could form the subject of a *logos*.\(^\text{36}\)

3 The Historical Context of Agatharchides’ Work

By treating the southern regions as a climatic unity, Agatharchides wished to bring together the history of humankind and the study of the physical environment, and this is where his originality lay. Light is shed on the work’s occasion by a series of extracts (\(F\) 12–18) from the opening chapters of Book 1, which describe a conversation between a prince and an unnamed high-ranking dignitary in the Lagid court, purportedly his tutor, who seeks to convince him of the opportuneness of an expedition against the Aithiopians, arguing the case for military action. This tutor was very probably Aristomenes of Alyzia, and the recipient of his *paraenesis* the young Ptolemy V Epiphanes, of whom he was *somatophylax* in 203 and *epitropos* in 201.\(^\text{37}\) In Photius’ collection,  

\(^{33}\) See \(F\) 21, in Phot., *Bibl.* 447 a 35–36 (about Demosthenes): ὃς τῆς διδασκούσης τὸ πράγμα ἐναργείας οὐκ ἐπελάθετο (“however his account of the event did non lack clearness”).  

\(^{34}\) On this official, see *PP* 14628.  

\(^{35}\) Musti 1996.  

\(^{36}\) See above n. 13.  

\(^{37}\) Identification by Droysen 1831, 5–6, accepted by Desanges 1978, 282. Burstein 1989, 14, seems to favour an identification with Ptolemy II.
these extracts are directly followed by a reference to an expedition against the Aithiopians and a description of their weaponry (F 19). This passage by Agatharchides is highly reminiscent of Herodotus, who describes a conference between Xerxes and his main advisers prior to the second Medic War (7.9). Sensing the young Persian king’s reluctance to engage in a war with the Greeks, whom he believes are guilty of starting hostilities, Mardonius mockingly asks exactly what he has to fear from adversaries so different from themselves, with the same rhetorical questioning as by Agatharchides.38 This schema is above all evident in Agatharchides’ description of the Aithiopians’ weapons (F 19), where the technical vocabulary is clearly borrowed from another passage of Herodotus, in the same Book (7.69), where the historian, in his catalogue of Xerxes’ troops, details the equipment of the Aithiopian contingent.

The position of the extracts in Photius’ Bibliotheca and the parallel with Herodotus’ text clearly indicate that Agatharchides used a military description as the starting point for his ethnogeographical description of Aithiopia. As in Herodotus, a war serves as a preamble and is followed by lengthy descriptions of the country, its antiquities, and its dietary and social customs. If we assume that Aristomenes and the young Ptolemy V are indeed the protagonists of the introductory discourse in Book 1, we can also assume that the conflict they discuss is the lengthy, but ultimately successful struggle that was subsequently undertaken to recover the Thebaid, whose twenty-year secession (206–186 BC) had seriously weakened Lagid power over its southern marches.39 However, while we can identify the casus used by Agatharchides, we still need to identify his underlying intention and establish the link between what was essentially a local military campaign and the grandiose setting of the Erythraean Sea, as defined by the author. Although we could once again invoke the shades of Herodotus here, he was concerned precisely with the universal significance of regional conflicts, each one giving rise to a historical and geographical synthesis that further magnified its importance. If a similar intent lay behind Agatharchides’ treatise, we therefore need to consider the royal conference and Aithiopian expedition in geopolitical terms, setting them in the context of the Ptolemies’ relations with the populations living along the coast of the Indian Ocean, and even their maritime policy.

The gradual conquest of the southern and eastern sea routes by Egypt’s Hellenistic dynasty began when the first Ptolemies took advantage of their armies’ advances up the Nile to reconnoitre the Red Sea coast.40 Charged with

38 Quotations in Marcotte 2010b, 43.
40 For a chronology, see Desanges 1978, 243–305.
keeping Alexandria’s zoos supplied with big cats and elephants, the hunters despatched by Ptolemy II (283–246 BC) and Ptolemy III (246–221 BC) to the Trogloidyteic coast also helped to improve knowledge of the Aithiopian lands. Ptolemy III sent several of his philoi to the Bab al-Mandab strait, and their reports undoubtedly influenced the geographical literature of the day. In the extracts preserved by Diodorus, Agatharchides cites at least two of them by name, Simmias (F 41) and Ariston (F 85), writing that the king entrusted the latter with the mission of reconnoitring the Arabian coast as far as the ocean, and this officer may also be the one mentioned in the Zenon Papyri. It is impossible to know whether these emissaries travelled beyond the strait, but it is generally assumed that Cape Guardafui was reached under Ptolemy IV (221–203 BC) and the island of Socotra was colonized during the same period.

The secession of the Thebaid marked the start of a long eclipse, during which contacts between Alexandria and the Red Sea ports were interrupted, or at least made more difficult. In Upper Egypt, extending from the region around Thebes to Koptos and Abydos, a fully-fledged state emerged, headed by the leaders of the uprising, first Haronnophris (205–199/8 BC), then Chaonnophris (199/8–186 BC). This lasted until Ptolemy V launched the expedition mentioned earlier and set up an epistrategy governed from Thebes in 186 BC that was to ensure the sector’s political and military stability. By the middle of the 2nd century BC, the Thebaid’s epistrategos was also overseeing the coastal area east of Koptos, as well as the sea and caravan trade routes that criss-crossed it.

The jurisdiction of the epistrategos was initially quite limited there, for beyond the strait, the Arabs living in and around Aden controlled the transhipment ports for all goods moving to and from India. This situation made Eudaimon Arabia, as Aden was known in ancient times, immensely prosperous, but was brought to an end by Eudoxus of Cyzicus’ famous sea voyages in 118 and 116 BC, and the lessons this seafarer drew from his personal experience of the monsoon winds. Reported by Strabo in his theoretical prolegomena (2.3.4–5), the navigator’s adventure showed how traders could take advantage

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41 Agatharchides (F 79) consulted royal archives in Alexandria; see Peremans 1967, 452–455.
42 PCZ 59247 (1st March 252 BC). On Ariston, see PP 16902.
43 Desanges 1978, 264, 276.
44 Desanges 1978, 302; Strauch 2012.
46 Thomas 1975.
47 OGIS 132.
of the seasonal winds that blow between the Horn of Africa and the western coast of India and thereby bypass the Aden chokepoint. It also meant—and this was the primary reason for the account given by the geographer—that the Erythraean Sea could finally be scientifically charted.50

In the wake of these discoveries, trade with India expanded considerably, as attested by Strabo (2.5.12; 17.1.13), Pliny (HN 6.100) and the Periplus Maris Erythraei (see below 5). From the ports of Myos Hormos and Berenice, ships would sail to Cana or Cape Syagrus, and from there, following the direction of the Favonius, to the embouchure of the Indus and the region of Patala, close to Hyderabad.51 The Lagid power soon set about establishing control over this trade, for a series of inscriptions apparently dating from between the end of the 2nd and middle of the 1st century BC shows that the Thebaid’s epistrategos saw his field of action broadened to cover all trade with India, taking on the additional title of “commander (or overseer) of the Indian and Erythraean Seas”.52 The juxtaposition of the two names in this title reflects the fact that the two toponyms relate to the same ensemble (which could be designated quite adequately by the second one). On closer reflection, however, it also confirms that a field of action that had hitherto been restricted to the western waters of the Erythraean now extended as far as India. Above all, it indicates that politically, issues pertaining to trade in the Red Sea henceforth had to be tackled on the scale of the Indian Ocean. All of which takes us back to the five books that Agatharchides devoted to the Erythraean Sea. Written several decades before this territory fell under the ambit of the Thebaid’s epistrategos, they already showed that a conflict between the Greeks with their Aithiopian neighbours could (or rather should) be viewed by historians and politicians in the more general context of relations between all the southern states and populations of the oikoumene.

50 See below 5.
51 For a history of Graeco-Roman trade in the Indian Ocean, see in general Casson 1989, 11–44; De Romanis 1996; especially in connection with archaeological data: Tomber 2008; Sidebotham 2011.
52 For instance I. Philae 1, 52 (OGIS 186) and 53 (14th May 62 BC); see Thomas 1975, 71, 121–122.
For anyone studying the development of geographical knowledge between the end of the Roman Republic and the Antonine dynasty, the Indian Ocean is without doubt the region where the greatest progress was made. It was the merchants who were responsible for this expansion of the known world in the early days of the Principate. Right up to the end of the Lagid period, they had inspired universal distrust, as we can see in Strabo’s Geography. For instance, he deplored (15.1.4) the poor quality of the accounts of merchants who attempted to sail to India from the Nile and the Arabian Gulf. Even so, he claimed in his prolegomena (2.5.12) to have witnessed firsthand the rapid expansion of maritime links between Myos Hormos and India when he accompanied the legions of Aelius Gallus to Syene. The merchants’ contribution to knowledge about the Indian Ocean was eventually acknowledged a few decades later, resulting in a before-and-after distinction that Pliny was the first to make, at least as far as we know. This comes through most clearly in the closing words of his portrait of Taprobane (Sri Lanka) and the Indian peninsula (HN 6.56–83), which he describes as divided in two parts: the first “following the ancient authors” (HN 6.84: hactenus a priscis memorata), the second being based on “more accurate information” (diligentio notitia) about these lands supplied during Claudius’ principate by a freedman of Annius Plocamus, a tax collector working around the mare Rubrum (HN 6.84–91). This mariner had been sailing close to the shores of Arabia when he was blown off course and ended up on the western coast of Taprobane, where he spent more than six months at the royal court. Pliny the Elder referred again to the change in his sources at the end of his description of India in Book 6, where he dealt with the trade routes from Alexandria and the names of the ports and peoples along the way. He noted that very few of these names figured in the works of his predecessors (priores), attributing this to a radical improvement in geographical knowledge (HN 6.105): “the names of people, trading ports or towns” that he has just cited in his description of the route from Alexandria to the peraia of Taprobane in a chapter dealing specifically with trade with India (Book 6, chapter 26) “are not to be found in any of [his] predecessors, hence it is obvious that the geographical situation is undergoing change”.

Now, in the previous list of names (HN 6.104–105), we find a number of toponyms or ethnonyms that actually appeared for the first time in the Periplus Maris Erythraei (§53–56) between 40 and 70 BC, in virtually the same order:

— See the corpus of sources studied by Dihle 1978; Sidebotham 1986.
Muziris (Μούζιρις), Caelobothras (Κηπροβάτας), Naecydon (Νέλκυνδα), Becare (Βακαρή), Cottonara (Κοττοναρική). We next encounter them, in a broadly similar form, in Ptolemy’s Geography (7.1.8–9, 86). For this reason, Pliny’s remarks only make sense if we exclude the author of the Periplus, with his particularly rich nomenclature, from the category of prisci or priores. These predecessors represented a tradition that obviously came to an end with Juba of Mauretania, who features at the top of the lists of foreign authorities (externi) in Books 5 and 6 of the Naturalis Historia (HN 1). Juba had been commissioned by Augustus to produce a huge and encyclopaedic compilation of all the knowledge that had been accumulated on the southern parts of the inhabited world since the Alexandrian historians.\footnote{55} Published on the eve of Gaius Caesar’s campaigns in the East in 2 BC, this compendium marked the culmination of a certain way of describing the southern space that would subsequently be discredited by the anonymous negotiatores who expanded maritime traffic to India in the early decades of the empire (Plin., HN 6.96; cf. 6.88, 140, 149).

The transition flagged up by Pliny the Elder and embodied by the Periplus brought with it a need to synthesize the corpus that had been formed during the Augustan period, updating or rectifying it in the process. This was doubtlessly the intention of Marinus of Tyre’s Διόρθωσις τοῦ γεωγραφικοῦ πίνακος. The prolegomena to Claudius Ptolemy’s Geography, our sole source for Marinus, gives us some idea of the amount of space that he devoted to discussing the accounts of recent generations of travellers and merchants.\footnote{56} Ptolemy himself consulted these sources whenever he was dissatisfied with the interpretations Marinus gave.\footnote{57} If both authors cited emporoi as their authorities (Ptol., Geog. 1.11.6–7), it was mostly because of the impact their accounts had had on representations of the Indian Ocean, extending it both in latitude (to Azania) and in longitude (to the South China Sea). Although these reports had limited theoretical scope, and it is highly unlikely that they were underpinned by a structured vision of the regions making up the inhabited world, by piecing them together and systematizing the data they contained, Marinus and Ptolemy were able to glean enough detail to produce relatively accurate maps.\footnote{58}

\footnote{54} This form seems to be a gen. pl. of Nelcynda (with a palaeographical error: ξΛ > Αξ).
\footnote{55} FGrHist 275; see Roller 2003, 212–243.
\footnote{56} Translation of the theoretical prolegomena in Berggren, and Jones 2000.
\footnote{57} Examples of disagreement on the Nile and Red Sea area in Geus 2013.
\footnote{58} For instance, they used the information provided by Maes’ agents about overland traffic to China to justify extending the oikoumene longitudinally to the departure points for the Asian trade routes, notably the Silk Road (Ptol., Geog. 1.11.7). On the construction of Africa’s maps, see Geus, and Mittenhuber 2009.
Without any doubt, the *Periplus* was one of the works that wrought this change. Unique in its kind, and obviously the work of a professional seafarer, the *Periplus* contains occasional references to the author’s experiences in the first person (§20). A feature that sets the *Periplus* apart from the other periploi that have come down to us is its purpose, for not only does it provide detailed lists of the goods traded at each of the ports it mentions, but it also often describes the conditions governing their import or export. Its author was clearly interested in the nature of the transactions (generally barter), the currencies used in some trading places (§47), and the import duties levied in others (§19). He also made special reference to the people who engaged in this trade, be they long-haul sailors or local middlemen (§56), and examined the political situation of all the countries along the sea route, from Myos Hormos to Rhapta, then on to Leukë Kômê (right bank of the modern-day Red Sea) and finally the Ganges Delta, paying particular attention to regional balances of power. He thus produced a comprehensive overview of the southern and eastern world, quite unlike anything else in our extant corpus of ancient geography.

As its first translator Ramusio rightly observed, the style of the *Periplus* does not match with that of an imperial historiographer. Today, the availability of papyrus documents enables us to make even finer comparisons, scrutinizing the morphology and syntax of the text, and even its lexicon. It is already clear that the many errors dotting the text in the *testis unicus*, the manuscript of Heidelberg, *Palatinus gr. 398* (9th cent.), cannot be laid at the door of the copyist. For example, the scribe avoided placing accents on words of foreign origin, especially those denoting traded goods. Furthermore, where passages in the model he was working from contained corrupted readings he could not amend, he took care to reproduce them exactly as they were, without a single accent or breathing mark. The conservative approach he adopted in the transcription of these passages is surely the best guarantee of his reliability.

One of the salient features of our text is the number of attempts at restoration made in successive editions, prompted by interrupted constructions and other syntactic approximations. A number of the latter probably reflect the fact that it was intended as an *aide-mémoire* (*hypomnema*) by its author. Evidence of this comes from the periplographer’s willingness to borrow from

59 Casson 1989, 15–43.
60 For an evaluation of the sources on the political relations between Rome, Arabia and India, see Sidebotham 1986, 113–141; Casson 1989, 45–47; Fussman 1991; Robin 1991.
61 See Milanesi 1979, 501–513 (Ramusio, *Discorso sopra la navigazione del Mar Rosso fino all’India orientale scritta per Arriano*).
62 As Frisk 1927, 38–123, has done.
the different languages spoken around the Indian Ocean. The presence of so many foreign words means that the entire *Periplus* constitutes a hapax in our corpus, marking it out as a truly innovative work. Many of the toponyms featured there for the first time in Greek do not appear anywhere else, with the exception of Pliny. Large use is made of foreign terms to designate the merchandise traded between the Arabian Gulf and the Ganges Delta—another novel feature that not only reflects the purpose of the work but also confirms the absolute innovation of the genre. Liberally sprinkled with imported technical jargon that could only possibly mean something to local experts, the language of the *Periplus* was obviously intended to convey knowledge that was familiar to people all around the ocean.

A major reason why this *Periplus*, rather than another, survived long enough to be included in the geographical corpus of Heidelberg is that, almost from the very outset, the information it provided was deemed to be credible, and its method of describing new spaces exemplary. The fact that a significant proportion of its nomenclature turned up in Pliny’s and Ptolemy’s writings suggests that it made a very real contribution to knowledge about the Indian Ocean’s geography during the early Principate—as, indeed, it continues to do, given the fragmentary state of our documentation. Ptolemy, for one, certainly emulated the manner in which hitherto largely unexplored areas were described, and above all the way in which the coasts were divided up into different sections. For instance, when describing Azania and detailing the coastline from Opone to the Pyralaoi archipelago (§15), the periplographer identified three separate coastal sections apparently on the basis of their morphology: sheer cliffs for the first (*Apokopa*), where ships could only lie at anchor in river mouths (*ἀγκυροβόλια*); a stretch of low, sandy beaches (*Αιγιαλοί*), again making landings difficult; and lastly a more amenable length of coastline, with estuaries and anchorages (*horoi*). Ptolemy (4.7.11) would later divide the Azanian coast up in exactly the same way as in the *Periplus*.

Geographical considerations may be few and far between in the *Periplus*, but they are present nonetheless. They can be discerned in the passage (§57) on the monsoon winds and how their discovery allowed a high-seas route to be opened up to India. The author portrays the pilot Hippalus as playing a decisive role, for “by observing the location (*theses*) of the ports and the shape (*schema*) of the sea, [he] first discovered how to lay his course straight across the ocean. It is after him that locally, at the same time as the seasonal winds we call Etesian blow in from the ocean, in the Indian Ocean the *libonotos* appears to be called.” This passage contains two terms belonging to the cartographer’s technical lexicon. Thesis is a place used as a landmark—a function fulfilled here by the *emporía* with the most accurate latitude coordinates,—while
schema is the figure determined by the geometric relationship between the theseis. All that mariners then needed to know was the direction in which the regular and predictable monsoon winds ("etesian winds") were blowing. It matters little to our discussion whether Hippalus was or was not a hypostasis of Eudoxus of Cyzicus, whom Posidonius and Strabo (2.3.4–5) credit as the first to exploit the monsoon winds. The fact that he is cited here as the “inventor” and name-giver of the southeasterly monsoon wind, is a noteworthy reminiscence of the protoi heuretai, a literary genre that occupied a prominent place in very early Greek historiography.

Further evidence of the link between the information provided in our Periplus and that contained in Pliny’s Indian chapter is that the encyclopaedist was the second author to signal the existence of a hippalus wind (HN 6.100), supposedly a local name for the Favonian wind that blew between Syagrus and Patale. Given its position in Book 6, he must have gleaned this detail from one of the sources that came after Juba, that is, one of his non-historian informants. These informants also allowed him to make the necessary correspondences between the Egyptian and Roman calendars (just as the Periplus did), in order to indicate the opening and closing of navigation and, more specifically, the most favourable times for sailing from Egypt to India or vice versa.

The Periplus Maris Erythraei and the Geopolitics of the Indian Ocean in the 1st Century AD

This wealth of information on the coastal powers, describing the political and economic realities that prevailed at a specific point in time, means that the Periplus can be dated far more accurately than the other works belonging to this genre, for which we often have to rely on archaeological or ethnographic data about the places and peoples they mention. For example, its descriptions of the sovereigns of Arabia, their vassals, and their relations with the populations living along the coast of Azania often tally with southern Arabian epigraphic sources. Similarly, the issues it raises about trade or diplomatic links with the Orient are frequently echoed in Roman sources, as the development of trade with Arabia and India was a controversial domestic policy, owing to the risk of the senatorial classes’ taste for luxury goods fuelling a capital flight.

63 Tchernia 1995, 994–995; Marcotte 2012a, 16.
64 See above about Plin., HN 6.96.
65 See the calendar reconstructed by Casson 1989, 289–291.
It was certainly in these terms that Pliny described trade with India, in a famous closing passage of his description of Taprobane (HN 6.101). According to him, it absorbed up to fifty million sesterces each year—a sum equivalent to half the “emergency fund” set up by Tiberius to revive the Roman economy during the financial crisis of 33 AD. In another passage (12.84), Pliny added that this fund was itself equivalent to the amount spent each year on merchandise imported from Arabia, India and China. We will not enter into a debate here about the accuracy of Pliny’s figures, or indeed about the validity of his interpretation, as both issues have been the subject of recent technical papers. Suffice it to say that the coastal markets of the Indian Ocean may well have been regarded in some quarters as one of the parameters of political life in the urbs.

As for Rome’s foreign policy, it was also at the start of the Principate that Roman historiographers recorded the first exchanges of embassies with the Indian world. Augustus himself had referred to them in his Res Gestae (31.1), emphasizing their novelty (“a thing never seen before”). His account matches that given by Strabo in his description of India (15.1.4), where he notes the dearth of direct contacts between Rome and the subcontinent, and characterizes the arrival of a delegation sent by a king called Pandion or Poros as a unique event. This information, which Strabo had from Nicolaus of Damascus (FGrHist 90 F 100), was confirmed by Cassius Dio (54.9.7–8), who further allows us to situate the encounter as taking place on Samos, in 20 BC.

As Pliny suggests, the voyage of the freedman of Annius Plocamus marked a turning point in the development of sustained relations between the Mediterranean and the Indian subcontinent. Commercial concerns appear to have dictated the exchange of emissaries on both sides. This is clearly confirmed on the Indian side by the Mahāvamsa, a poem written in the Pali language that recounts the history of Sri Lanka’s Sinhalese and Dravidian kings from the time of Cyrus the Great to that of Emperor Julian. According to this chronicle, King Bhātikābhaya, who reigned over Taprobane at the time of Claudius, had a splendid coral net made to adorn a shrine on the island. He is said to have ordered it from a far-off land beyond the sea called Romanukhartṭha, meaning “Roman empire” in its broadest sense. We learn from the Arthaśāstra that red coral, the most highly prized coral in the Indian Ocean, was imported from Alexandria.

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68 Sources collected and discussed by De Romanis 1988, 5–58 (with supplements in De Romanis, and Tchernia 1997, 161–237); see also Faller 2000, 75–76; Sidebotham 2011, 238–239.
The descriptions of this great theatre of trade and diplomacy we have access to from both Oriental and Graeco-Roman sources indicate that the Indian Ocean functioned as a truly globalized system in the first two centuries AD.\(^{69}\) This perception of the ocean as a single entity was inherited from Hellenistic historians and geographers—foremost among them Agatharchides. However, the approach adopted by these authors was mainly shaped by the expository form they had inherited from classical ethnography, and the peoples were often studied in relation to Mediterranean populations. By contrast, in the *Periplus Maris Erythraei*, this maritime space derived its unity from the goods that were traded there. This notion found echoes in the literature of the day, for Pliny’s famous scale of material values (*HN* 37.204), in which the most renowned luxury products and gemstones came from India and Arabia, implicitly confirmed that these goods, ranging from tortoiseshell to pepper and incense, helped to shape the image the Greeks and Romans had of the Indian Ocean and, in this way, brought about the creation of its identity in contemporary representations.\(^{70}\)

The author of the *Periplus* viewed the ocean as a system of exchanges, and this led him to look beyond the Graeco-Roman routes and the contacts between the Mediterranean countries and the Eastern world to the relations forged between the different countries within that zone. For example, he describes the Aethiopian city of Rhapta as paying tribute to that of Mouza, on the borders of mod. Yemen, and underscores the role played by Arab pilots in creating close links between their country and the Azanian coast, through their mastery of local tongues and their “marriages” with local women. Similarly, he mentions exports of silk from China to the Indian port of Barygaza (in the Gujarat, on the Gulf of Khambhat) via the mainland route across Bactria, and to Limyrikkē (on the Malabar coast) via the Ganges Valley.

The peculiar way that China is described reflects a new approach to local realities and a willingness to eschew the models of literary tradition. For it is in the *Periplus* (§64–65) in a discussion about silk production, that we first come across the name *Thina* (probably an accus.), derived from that of the Qin dynasty that set the Chinese world on the road to unity at the end of the 3rd century BC. This toponym vaguely refers to a *polis*, characterized as *megiste* (“greatest”), supposedly located far inland to the north of Chryse Chersonesos, from which *erion serikon* is exported (§64).\(^{71}\) The name *Thin/Thina*, suggesting a sibilant pronunciation of the aspirated dental, may well have reached the Greeks via Sanskrit. As the periplographer associates this great city with

\(^{69}\) Beaujard 2012; Marcotte 2011, 18–21.


\(^{71}\) Casson 1989, 238–239.
the silk trade, it is easily confused with references to the city of the Seres contained in late Graeco-Roman sources, the earliest of these being the Augustan poets.72 In the Antonine period, the Qins’ name cropped up again, with Ptolemy referring to the metropolis Thinai and to the Sinai people on several occasions, in both his prolegomena and the Geography itself, where he described the new routes leading inland from Chryse Chersonesos.73 He located their country at the far end of the Great Gulf (Megas Kolpos), thought to be the Gulf of Tonkin, and identified their northern neighbours as the Seres, providing the map coordinates of Sera, the capital of Serike (7.3.1). Whereas the Periplus discreetly switched to using serikon as a “designation of origin”, talking about “Seric skins”, Ptolemy drew a rather clumsy and artificial distinction between the Seres and the Thinai/Sinai in an attempt to reconcile the literary tradition and the accounts of the emporoi.

Between the Augustan period and the end of the Antonine rule, the traditional representation of the Indian Ocean inherited from the Persians, along with the name “Erythraean”, was slowly but surely called into question.74 An examination of our Greek and Latin corpus reveals a decline in the number of occurrences of the name “Erythraean Sea” in the early centuries AD, and a proportionate increase in references to India, confirmed by Eastern sources.75 The “Indianization” of these references began rather hesitantly at the end of the Hellenistic period, an early illustration being the title of the Thebaid’s epistrategos.76 It then gathered pace, with the opening of routes towards the Bay of Bengal, the Malacca Peninsula, and even beyond, to the Indochinese peninsula or the island of Java.77 The expansion of this maritime space meant that India ceased to mark one of its boundaries, becoming instead its centre of gravity. During this same period, inspired by contacts with trading posts and the chancelleries of the subcontinent, the Graeco-Roman world became far more receptive to what was happening in India, and that receptiveness was no longer mediated and dictated by Iranian, Persian or Parthian intermediaries. One illustration of this change lies in the emergence of alternative versions of the name Indus from the 1st century AD onwards. Until then, the only form in use had been Indos, an ancient adaptation in the Ionic dialect from Hindu,

72 On the Seres in classical sources, see Dihle 1984, 201–215.
73 Ptol., Geog. 7.3.6 (Thinai); 1.14.10; 1.17.5; 7.3; 7.5.2, 13 (Sinai). The latter form clearly derives from the former, likely through a paleographical error (ΘINAI > CINAI).
74 Marcotte 2010b, 22–24.
75 Salles 1994.
76 See above n. 52.
77 So Winkler, and Mittenhuber 2009, 303.
the name by which the Persians knew the river and the lands embraced by its
delta. In inscriptions dating from the Achaemenid period, the latter name is
used to refer to the southeast confines of the empire, which Darius had pushed
back as far as Sindh. In turn, the Persian form was a translation of the name
Sindhu, by which the Indo-Aryans designated the Indus and its lower basin.
It is the hydronym Sinthos that features in the *Periplus Maris Erythraei* (§38),
where there is no trace of the classic name Indos. This form, which accu-
rately renders the Indian phoneme -dh-, signals a clear break with the whole
Graeco-Roman literary tradition, as do many other features of this work. It also
symbolizes the dominance of Indian references over the Persian model. Not
only, therefore, was he in contact with local speakers, but he also credited them
with the greatest authority, presumably because this was the form used by his
intended audience.

Writing in the same period, Pliny the Elder (*HN* 6.71) had also registered the
form Sindus, which he expressly attributed to the Indians. Apparently things
were rather more complex in Ptolemy’s case. As so often in his description of
the southeast quarter of the oikoumene, he was obviously torn between his
attachment to the corpus of the geographers and historians who had gone
before him, and his awareness of the new information being brought back by
sailors and merchants. He there registered the neutral form Sinthon (*Geog.*
7.1.2), a possible legacy of the *Periplus*, but only used it to designate one of the
arms of the Indus. As we saw earlier for the names Thinai and Seres, it is as
though he were trying to maintain not just two competing terms but two com-
peting traditions—a longstanding one consecrated by Hellenistic science, and
a nascent one, which he analysed in his prolegomena.

Ptolemy’s dilemma over the twin names for the Indus illustrates the diffi-
culty of substituting a new vision for a model served by a founding tradition
that had been around since the time of Darius and Alexander. Like Marinus
he was, however, only too aware of the geopolitical changes that had taken
place in the Indian Ocean. In the picture he gave of it in Book 7, the Indian
subcontinent was latitudinally “squashed”, mainly due to the absence of the
Deccan Plateau, while Taprobane was correspondingly inflated. These dis-
torted dimensions, which contrast sharply with the accurate description of
the Indian coastline in the *Periplus*, did not prevent Ptolemy from placing the
subcontinent in the centre of his map. In his work, the name *Indikon pela-

78 From Aesch., *Suppl.* 284 onwards.
80 Dihle 1978, 557.
gos, or “Indian sea”, was no longer restricted to the Sea of Oman, as it was in the Periplus (§57), but replaced the name Erythra thalassa and was described as extending from the coasts of Africa to the shores of Kattigara, to the south of the land of the Thinai. Longitudinally, it therefore occupied the space that the Periplus still assigned to the Erythraean Sea, from the Red Sea to the Bay of Bengal.
The So-called Confusion between India and Ethiopia: The Eastern and Southern Edges of the Inhabited World from the Greco-Roman Perspective

Pierre Schneider

Praecipue India Aethiopumque tractus miraculis scatent ("India and parts of Ethiopia especially teem with marvels"—Plin., HN 7.21; trans. H. Rackham)

In 1681 the celebrated German orientalist Hiob Ludolf published his Historia Aethiopica.1 At the end of the first chapter, in which the various names given to Ethiopians in classical antiquity were quickly reviewed, the author concluded: quae nominum diversitas . . . haud exiguum confusionem peperit. This is probably the first appearance of a term coined by Ludolf to define a phenomenon which occasionally raises difficulties for classicists and historians, for it may hinder our understanding of ancient texts: the confusion of India and Ethiopia.2 Here are some examples: “Caesarion, who was said to be Cleopatra’s son (…), was sent by his mother, with much treasure, into India, by way of Ethiopia” (Plut., Ant. 81.2; trans. B. Perrin); but we do not know where to locate this “India”: in east Africa or in India proper? The spice called κιννάμωμον/cinnamomum remains partly mysterious, since ancient documents are unclear: according to Herodotus (3.107) it was obtained in Arabia, while other authorities attributed it to Ethiopia (Strab. 2.1.13) or India (Theophr., Hist. pl. 4.4.14). The reports of Semiramis’ feats are affected by a persistent confusion: did the queen attack Indians (Ampelius, Liber memorialis 11.3), Ethiopians (Diod. Sic. 3.3.1) or both of them (Diod. Sic. 2.16.1–2)?

In fact it was not until the 19th century that the confusion was seriously investigated. In particular Schwanbeck, the publisher of Megasthenes’ Indika,

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1 Ludolf 1681, Liber 1 cap.1.
2 E.g., Goldenberg 2003, 211; Snowden 1970, 11; Desanges 1978, 230 n. 74; Fiaccadori 1983, 303 n. 33; Mayerson 1993, 170. The "confusion" between India and Ethiopia survived in medieval times (Wittkower 1942; Richard 1952).
was the first who, scrutinizing Greek and Latin literature, listed the data related to “Libya” (= Ethiopia) which had been transferred to India, and vice versa. He also offered the first real explanations for this “amazing confusion” (mira quaedam confusio). Schwanbeck—as some scholars still do—associated this phenomenon with the gaps and inaccuracies of Greco-Roman knowledge. In reality, as will be explained after a short description of the confusion between India and Ethiopia (section 1), this extensive and varying phenomenon is not fundamentally a matter of ignorance or error: on the contrary it reflects how the Greco-Romans perceived the southern and eastern fringes of the oikoumene (section 2). There are many reasons why they constantly tended to establish parallels between India and Ethiopia, the most important of which will be presented in section 3.

1 Describing the “Confusion”

1.1 The Themes
A comprehensive inventory of the “confusions” would obviously exceed the limits of this paper. The following sample, however, suffices to get an idea of their number and variety.

Let us examine, to begin with, the question of spatial divisions and designations, that is the presence of Ethiopians in the East and the expansion of India into east Africa respectively. In the Odyssey (Od. 1.23–24), Homer praises “the Ethiopians who dwell sundered in twain, the farthermost of men, some where Hyperion sets and some where he rises”. We can neither clearly identify these Αἰθιοπῆες (“Burnt-Faces”) nor determine to what extent they were real peoples, especially with regard to the “eastern Ethiopians”. It has been rightly doubted since ancient times (Strab. 2.3.8) that Homer was aware of India. On the other hand, the idea that the eastern end of the oikoumene was occupied by “Burnt-Faces” had been undoubtedly fixed among the Greeks by the Poet. That is why in the fifth century BC, following the extent of the Greek geographical horizon, some “Ethiopian” tribes were, almost naturally, located by the Greeks in the East. For instance, the 17th Persian nomos comprised the “Ethiopians of Asia” (a Baloch tribe?), who “were not different in appearance from the others, only in speech and hair” (Hdt. 3.94; 7.70; trans. Godley). Herodotus

3 Schwanbeck 1846, 2.
4 E.g. Arora, 1982, 131; Taboada 1988, 135–47; French 1994, 144, 147; Sidebotham 1986, 41.
5 The Ethiopians neighboring Egypt were probably known to Homer (e.g. Od. 4.81–85).
6 The Ethiopians of Nubia.
(3.101) pointed out a strange Indian tribe who “have intercourse openly like cattle” and “are all black-skinned, like the Ethiopians” (τὸ χρῶμα φορέουσι ἐμοῖον πάντες καὶ παραπλήσιον Αἰθίοψι). In the Roman imperial period Pomponius Mela (3.67) compared the southern Indians to Ethiopians; Ptolemy (Geog. 7.3.1) reported that a tribe of *Ichthyophagi Aithiopes* dwelt somewhere in Trans-Gangetic India etc.

In the opposite direction the name “India” was applied to some parts of east Africa. Whether this “confusion” was already present in Ctesias’ work, in the early fourth century BC, cannot be clearly established. In contrast, this phenomenon is indisputably attested at the time when maritime trade with India was steadily expanding, following the exploration of the Red Sea by the Ptolemies and above all the annexation of Egypt by Rome (30 BC). Various pieces of evidence going back to the first and second centuries AD clearly show that certain areas of east Africa were called “India” (e.g., Pliny [infra, p. 190]; Plut., *Ant.* 81.2; Ael., *NA* 12.32; 16.33; Hyg., *Fab.* 133). Such representation of space, which later included south Arabia, is more and more documented from the third century onwards. For instance, in the late third century AD Constantius was praised for subduing the Ethiopians (= Nubians) and “Indians” (= Blemmyes)8 (Pan. Lat. 5.5); Eusebius (Vit. Const. 4.7.1) claimed that Constantine the Great received Ethiopian, Blemmye and “Indian” (= Ḥimyarite) ambassadors; how the “Indian” (= Axumite) king embraced Christianity is related by Rufinus of Aquileia (Hist. eccl. 1.9–10).

Many “confusions” between India and Ethiopia also appear in texts dealing with, or alluding to lands, peoples, animals, plants etc., of which I would like to give several significant examples. Let us begin, for instance, with rivers which play a major part when countries are depicted: as early as the fifth century BC the Nile—a river belonging to Egypt and Ethiopia as well—and the Indus were linked, as both of them were home to crocodiles (Hdt. 4.44). The comparison was carried further when Alexander and his friends discovered India and observed the Punjab rivers flooding because of the monsoon rainfalls: they strongly emphasized the parallel with the Nile spreading in the Egyptian plain every summer (e.g., Strab. 15.1.13 = Eratosth. 111 B, 12 Berger; 16 = Nearchus *FGrHist* 133 F 17; 18 = Aristobulus *FGrHist* 139 F 35). To take another example, from the Greco-Roman point of view, India and Ethiopia received much solar heat thanks to their position in the *oikoumene*. Of course, Alexander and his companions noted that the atmosphere was more humid in India than Ethiopia (e.g., Strab. 15.1.24), which could explain why, unlike the Ethiopians,
the Indians have smooth hair (e.g., Arr., Ind. 6.9). In reality, however, the fundamental idea that both India and Ethiopia enjoyed an exceptionally warm climate—as proved by the skin color of their inhabitants (infra, p. 201)—was not contradicted by such details. Other “confusions” were related to peoples’ νομοί (customs, way of life). E.g., while exploring Gedrosia⁹ and the Red Sea,¹⁰ the Greeks came across tribes whose livelihood was based on fish (Ichthyophagi). Such reports led some authorities to the conclusion that the whole Erythraean Sea—an area shared by India, Arabia and Ethiopia—was occupied by Fish Eaters (e.g., Strab. 2.2.3 = Posidonius F 13 Theiler).¹¹

A large number of “confusions” between India and Ethiopia involve animals, the most emblematic of which are of course elephants. That they lived in Libya (=Africa) and India was known to Greeks in early times (Hdt. 3.114; Diod. Sic. 2.16.2–4 = Ctesias FGrHist 688 F 1b §16–19). As for Ethiopian elephants, they became especially famous from the time when Ptolemy II and his successors had them captured and trained for war (e.g., OGIS 54). Even if Indian elephants were thought to be bigger and stronger than African ones (e.g., Polyb. 5.84), never were the two species distinguished, which implies that elephants were considered as common to India and Ethiopia. Besides this celebrated creature other animals contributed to India and Ethiopia being linked: parrots, “Indian” bulls, giant snakes, tigers, kynokephaloi etc. Some plants remarkable from the Mediterranean point of view were attributed to India or Ethiopia or even both countries (e.g., the giant reed [= bamboo]: Tzet., Chil. 7.731–733 = Ctesias FGrHist 688 F 45c; Heliod., Aeth. 10.4.6; Strab. 17.3.5). Most “confusions”, in fact, are related to spices and aromatics imported for Mediterranean consumption. This situation is a vexing issue for those who study Greece and Rome’s eastern trade, such as S. Sidebotham: “Diodorus Siculus, Vergil, Propertius, Ovid, Strabo, Pliny, Seneca, Statius, Athenaeus and others were mistaken about the origin of some of the produce imported from the East, especially incense, spices and ebony”. Among the most significant mistakes and confusions the author reports those related to myrrh (Plin., HN 12.71), zingiberi—ginger?—(Plin., HN 12.28), cinnamum—cinnamon?—(Stat., Silv. 4.5.30–32; 5.3.42–43).¹²

This sample would not be representative if I omitted the παράδοξα or mirabilia (marvels), which were present in almost all descriptions of the οἰκουμενή: such features, indeed, equally contributed to characterize peoples

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⁹ Nearchus in 325 BC.
¹⁰ For the purpose of elephant hunting in the third century BC.
¹¹ Posidonius regarded all Ichthyophagi groups as characteristic peoples of the “zones under the tropics”.
and countries. It is important, however, to distinguish between two types of παράδοξα: on the one hand natural phenomena which could be observed (Greek: ὄψις, αὐτοψία) and as far as possible rationally explained; on the other hand hearsay (e.g., Strab. 17.2.1) and to some extent fanciful accounts. As for the first category, besides those which have been mentioned above (the summer flood of the Nile, the giant reeds, the Fish Eaters etc.) there are, for instance, the Erythæan Sea mangroves (Strab. 16.3.6–7 = Eratosth. III B, 39 Berger) or the “wool bearing trees” (= cotton: e.g., Verg., G. 2.120; Hdt. 3.106). The second category comprises a series of peculiar peoples and animals. Let us quote, for example, the Pygmies mentioned by Homer (ll. 3.4–6): Ctesias (FGrHist 688 F 45 §21–24) located them in India; Aristotle (Hist. an. 8.12.597a) reported that they dwelt close to the spring of the river Nile; according to Philostratus (V A 6.1) they lived in both India and Ethiopia. There are also the Sciapodes, protecting themselves from the burning sun with their enormous foot (e.g., Ctesias FGrHist 688 F 51a; Philostr., V A 6.25), the Dog-Headed people (Gell., NA 9.4.9; Plin., HN 6.195; Philostr. V A 6.1) etc. Among the fabulous animals let us point out the gold-digging ants (e.g., Hdt. 3.102; Soph. F 26 Nauck), the κροκόττας (e.g., Peripl. M. Rubr. 50; Plin., HN 8.72), the phoenix (e.g., Ach. Tat., Leucippe et Clitophon 3.25; Lucian, Navig. 44) etc. To close this short review it is worth mentioning the pantarba (a stone attracting gemstones: Ctesias FGrHist 688 F 45§6; Heliod., Aeth. 8.11.2) or the Indian / Ethiopian fountain which makes people tell the truth (e.g., Dio Chrys., Or. 35.22; Diod. Sic. 2.14.4 = Ctesias FGrHist 688 F 1b).

Now that, as I hope, the reader has got an adequate overview of this ample phenomenon, let us examine it from a diachronic perspective.

1.2 A Short History of the “Confusion” between India and Ethiopia

The numerous gaps in Greek and Latin evidence do not allow us to build an accurate history of the “confusion”. However it remains possible to grasp the main developments of this very ancient phenomenon, which, as will be seen, constantly took new forms and never diminished.

As Schwanbeck rightly stated, the “double” Ethiopia of the Odyssey marks the very beginning of the “confusion” in Homer’s geographical frame, from which India was absent. As soon as, however, the res Indicae formed part of the Greek knowledge—viz. in the sixth century BC—, the phenomenon appears clearly. For instance, the Sciapodes located in India by Scylax (Tzetz., Chil. 7.621–629 = FGrHist 709 F 7b) were said to live in Ethiopia by Hecataeus (Steph. Byz. s.v. Σκιάποδες = FGrHist 1 F 327). In the mid-fifteenth century, as Herodotus’ above quoted passages show, the foundations of the phenomenon—i.e., a series of major themes (skin-color, eastern Ethiopians, emblematic ani-
mals)—had been lain. India and Ethiopia were also linked in tragedy (Aesch., Supp. 283–286; also PV 808–809), which proves that such a perception of space was already quite disseminated. In the early-fourth century Ctesias certainly brought the “confusion” a step further: e.g., the Pygmies are located in India [supra, p. 188]; the martichoras is reported in India (Arist., Hist. an. 2.1.501a24-b1 = Ctesias FGrHist 688 F 45dα) and Ethiopia as well (Plin., HN 8.75 = Ctesias FGrHist 688 F 45dδ). Because of such texts Ctesias was more than once blamed for writing fairy tales. In my opinion, he just made his contribution to a tendency that preceded him.

Alexander’s expedition in Asia was unquestionably a turning point: the knowledge of the inhabited world was dramatically enhanced. A series of novel parallels between India and Ethiopia appear which were supported by observation (ὄψις) and rationally argued. Alexander’s companions, indeed, methodically established parallels between India and Ethiopia—associated with Egypt—. They emphasized the similarities between the two areas—which seemed to them more noticeable than their differences—particularly with regard to the climate (ἀήρ [e.g., Strab. 15.1.13 = Onesicritus FGrHist 134 F 7]) and summer floods of the rivers. The Indian monsoon rainfalls drew the Macedonians to the conclusion that the Nile’s flooding was also caused by summer rains, which was the answer to a major geographical problem (Strab. 15.1.19 = Aristobulus FGrHist 139 F 35). Despite their difference in terms of humidity,\(^{13}\) India and Ethiopia/Egypt basically shared the same ἀήρ: that is why these lands were extraordinarily fertile, and were home to dark-skinned people, remarkable animals and marvelous plants.

From Alexander’s time to the second century BC more and more was known about peoples and places in the eastern and southern edges of the oikoumene. Interestingly this increasing amount of knowledge gave rise to new parallels between India and Ethiopia, whenever the Greco-Romans discovered the existence of animals, plants or peoples that seemed comparable to them. For instance, the presence of Ichthyophagi tribes in the southern Red Sea, beside the Gedrosian Fish Eaters, led Agatharchides to the conclusion that such peoples lived on the whole Erythraean Sea (Diod. Sic. 3.14.1 = Agatharchides GGM I 129]). The explorers sent by Nero observed “parrots” (supra, p. 201) in Ethiopia, which were characteristic of India (Plin., HN 6.184). Most remarkable is the case of some Hellenistic scholars who used the analogy between India and Ethiopia in their commentaries on Homeric poems: who, e.g., were the Ἐρεμβοί visited by Menelaus (Od. 4.84: “and I came to the Ethiopians and

\(^{13}\) This difference was supposed to explain why “the Indians do not have woolly hair” (Strab. 15.1.24; trans. H.L. Jones).
the Sidonians and the *Eremboi*?) Most grammarians identified them with Arabs or Ethiopians. Crates of Mallus, however, correcting the word *Ἐρεμβοί* and replacing it with *Ερεμνοί* (= “black/dark people”) claimed that Menelaus had sailed on the Ocean as far as India (Strab. 1.2.31; 16.4.27). In other words, the “confusion” was even present in scholarly debates.

In the late Hellenistic period and Early Principate, the maritime commerce between the Mediterranean world and the Indian Ocean countries expanded considerably. As a consequence the southern and eastern extremities of the inhabited world became more familiar to the Greco-Romans. The geographical knowledge that we find, e.g., in the *Periplus maris Erythraei* and Ptolemy’s *Geography* benefited from the trade exchanges pushing merchants as far as *Rhapta, Muziris, Ganges* and the Silk producing country. Pliny, however, describing the Indian Ocean routes quotes Juba (ca. 50 BC–23 AD) stating that *Lepte Acra* (in the vicinity of Berenice [Egypt]) was also called *promuntorium Indorum* (“promontory of Indians”; Plin., *HN* 6.175 [= Juba *FGrHist* 275 F 35]): this is one of the earliest cases of the name “India” being applied to an African area. Such alteration in the Mediterranean representation of space seems to appear also in Virgil’s poems—which implies that it had probably spread out—: he mentions “Indians” who are likely to be Ethiopians (G. 4.293; Aen 8.705). Be that as it may, there is little doubt that here we witness a major development in the history of the “confusion”.

The expansion of India is more and more attested from the third century AD to the end of antiquity. That is why we find in some authors dating back to this time expressions such as *India major* (Expositio totius mundi 16); “the Indians nicknamed fortunate” (*Ἰνδοῖς τοῖς καλουμένοις Εὐδαίμοσι* [Epiph., *Index apostolorum*, p. 110]); *India citerior* (Rufinus of Aquileia, *Hist.eccl.* 1.9). By using such epithets they helped the reader identify the area they were talking about: Axum, Ḥimyar, India proper etc. Of course some authors still used the “traditional” spatial designations; it seems, however, that this new representation of the eastern and southern part of the *oikoumene* had become common. Therefore it is not surprising that some *realia* and *mirabilia* belonging to Ethiopia happened to be referred to as “Indian”. For instance, Cassius Dio (76.1.4) mentions an Indian *χοροχότας* (hyena?), whereas this animal was mostly attributed to Ethiopia; Philostratus (*V A* 2.22) claims that black color was not needed to represent an “Indian” man, for the artist had just to draw . . . a flat nose and curly hair. Besides this, we find in texts from this period several parallels between India and Ethiopia that were absent from previous documents (*e.g.*, Palladius, *De gentibus Indiae* 1.6; Procop. 1.19.24–25; Nonnus, 14 Amm. Marc. 22.15.2; 23.6.70; Procop. 1.19–20.
Dion. 43.165). Some scholars, considering the numerous parallels between India and Ethiopia in Late Antiquity, thought that this phenomenon reflected the increasing deterioration of Greco-Roman geographical knowledge. This historical overview, on contrary, aims to prove that the “confusion” was deeply rooted in Greco-Roman knowledge from the beginning.

1.3 Appendix: Not only India and Ethiopia, but also Arabia, Libya, Mauretania etc.

At this stage one could imagine that this phenomenon related exclusively to India and Ethiopia. Actually Persia, Libya, Egypt, Mauretania etc. were occasionally included. For instance, elephants also characterize Libya and Taprobane (Plin., *HN* 6.81; 8.32); the *Mauri* were sometimes considered as “western Ethiopians” as appears in Juvenal (6.336–339): *sed omnes / nouerunt Mauri atque Indi / quae psaltria penem / majorem quam sunt duo Caesaris Anticatones / illuc <intulerit>” (“But every Moor and every Indian knows how Clodius forced his way into a place . . .”, trans. G.G. Ramsay; also Manilius, *Astronomica* 4.727–728); Eratosthenes reports that “the extreme parts towards the south (i.e., of Arabia), lying opposite to Ethiopia, are watered by summer showers, and are sowed twice, like the land in India” (Strab. 16.4.2 = Eratosth. III B, 48 Berger). In the mid-fifth century BC Herodotus (3.106) had already written that “the most outlying nations of the world (ἐσχατιαὶ τῆς οἰκεομένης, i.e., India, Arabia, Ethiopia) have somehow drawn the finest things as their lot”. The most significant text, however, is provided by Posidonius (Diod. Sic. 2.51–53 = Posid. F 78 Theiler) stating that countries well exposed to sun (i.e., not only India and Ethiopia, but also Arabia, Libya and Egypt) all produce remarkable animals, colorful birds and extraordinary gemstones.

India and Ethiopia, however, are the predominant poles of the “confusion”, for they appear much more than any other country in our evidence. In particular it was quite common to pair India with Ethiopia (*e.g.*, Theophr., *Hist. Pl.* 9.15.2; Plin., *HN* 7.21; 10.3; 10.136; 19.15; Luc. 10.117–20; Lucian, *Syr. D.* 16; Jer. *Adv. Iovinian.* 2.7 etc.), to such an extent that it may have become commonplace (Ach. Tat., *Leucippe et Clitophon* 4.5). As a matter of fact India and Ethiopia had been linked by ancient and prestigious authorities (Aeschylus, Herodotus). This, undoubtedly, explains why the couple India / Ethiopia constantly predominate in this phenomenon.

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15 For example, Warmington 1974², 140: “… the ignorance now shown about India was truly prodigious.”

16 Such association of India and Ethiopia was a literary way to say “in the whole world”.

2 Defining the “Confusion”

The documentary evidence, however varied it may seem, does not enable us to accurately characterize the confusion between India and Ethiopia. We can at least set out the most evident features of this lasting and protean phenomenon.

2.1 Does the Confusion Reflect a Lack of Knowledge?

The borders of today’s India and Ethiopia—as those of any modern state—are linear and strictly defined. It may, therefore, be surprising to see India and Ethiopia being mixed up in antiquity. This is certainly the reason why the term “confusion” has commonly been applied to this phenomenon: this word, like several other expressions which appear in academic studies (e.g., “imprécision”; “interchange”)\(^\text{17}\) have generally negative connotations: it is, more or less explicitly, said that the ancient knowledge relating to these parts of the \textit{oikoumene} was to some extent affected by ignorance, error or inaccuracy.\(^\text{18}\) In reality this opinion needs reconsideration.

Let us take Strabo (1.2.4–28) as a guide to address the issue. In a long debate about the Ethiopians of the \textit{Odyssey}, he defends Homer against those who blamed the Poet for his lack of geographical knowledge (τὴν πολλὴν ἄγνοιαν). Strabo does not deny that “ancient authorities” (τῶν ἀρχαίων Ἑλλήνων) were not as well informed as their successors, but he objects that the designations used by them were in accordance with their level of geographical knowledge. Accordingly they would call “Ethiopians” all peoples living in the southern part of the inhabited world. Later, however, at a time when geographical knowledge had been improved, the name “Ethiopians” would only apply to the tribes living south of Egypt. In other words, Strabo refuses to reject ancient designations under the pretext that they are wrong; instead he argues that they must be put in context to be properly understood. Similarly, let us scrutinize the context in which the parallels of India and Ethiopia were produced.

Let us begin with the question of the spatial expansions of Ethiopia and India respectively. Even after the limits of Ethiopia had been more or less accurately defined (\textit{e.g.}, Strab. 17.3.1), there was no contradiction in thinking that \textit{Aithiopes} (= black-skinned people) were present outside Ethiopia proper. In other words claiming that Ethiopians were present in India was certainly not unreasonable (\textit{e.g.}, Them., \textit{Or}. 30.349c). As for “African Indias”, they are closely related to the growth of the Indian Ocean trade, which was accompanied by a

\(^{17}\) Respectively André 1949a, 157–8; Goldenberg 2003, 211. More neutral expressions in Albaladejo Vivero 2005, 11; Dihle 1962a, 50–1 n. 6.

\(^{18}\) See supra n. 4; n. 15; also Mayerson 1993, 170; André 1949a, 162.
new experience and perception of space: in fact the Indian expansion towards Africa reflects a new way of organizing the Indian Ocean area in terms of geography. As a case of alteration in spatial designations, it is hardly a matter of geographical ignorance: the Greco-Romans who called the Axumites “Indians” instead of “Ethiopians” did the same as us who use the name “Ethiopia” instead of “Abyssinia”. As a consequence, when, for instance, Aelian (NA 17.40) refers to “Indian Rhizophagoi”—a famous Ethiopian tribe (Diod. Sic. 3.23.2 = Agatharchides GGM I 141)—he is likely to be updating his geographical knowledge rather than making a mistake.¹⁹

The numerous parallels between India and Ethiopia concerning the realia (animals, plants, climate etc.) could at first sight support the idea that these “confusions” reveal the gaps and vagueness of ancient knowledge. Such a view, I believe, is irrelevant in many cases. For instance, how could the Greco-Romans differentiate Ethiopian myrrh (e.g., Plin., HN 12.51 [Commiphora spp]) from that from India (Plin., HN 12.71 [Balsamodendron spp?]), considering that they could observe only raw material? They also lacked the means and concepts (e.g., taxonomy) on which modern science is based, which implies that, for instance, defining two different species of rhinoceros was simply impossible. Most of the above mentioned parallels relate, in my opinion, to realia that were objectively similar from the Greco-Roman point of view; therefore they seem not to reflect their inaccuracy or ignorance.

At this point I would like to make an additional observation. Today biodiversity has become a popular concept. On the other hand, in ancient descriptions of the eastern and southern parts of the oikoumene, much attention was paid to similarities that could be recognized in these areas—certainly they were more important than differences—. As is clear in the reports of Alexander’s companions, the ὁμοιότης (“resemblance”) helped build on an organized and coherent depiction of the world; this was not called into question by some differences (ἐναντιότης) of which they were aware. For instance, the presence of dark-skinned people or elephants in both regions prevailed over the differences concerning the color of the skin or the size of elephants.²⁰ That the ὁμοιότης between India and Ethiopia came sometimes to be used as a heuristic tool seems to corroborate this assumption: it is well known that Alexander thought for a while that he had discovered the Nile’s source after he had observed Nilotic animals and plants in the river Indus (infra, p. 196).

¹⁹ A number of occurrences show an awareness of the alterations of geographical names (e.g., Peripl. M. Rubr. 61; Amm. Marc. 22.15.2; Cosm. Ind. 3.66).
²⁰ Dihle 1962a, 49–53; Schneider 2004, 316–21.
Let us now consider the “confusions” involving realia and mirabilia which at a first glance seem really to be mistakes. As a matter of fact they may have another interpretation, provided they are put into context. For instance, Ptolemy (Geog. 4.8.4) mentions an Ethiopian “tiger”, but this name is very likely to apply to an animal which is not the tiger proper. The so-called Indians who worship Hammon were certainly some neighbors of Egypt (Luc. 9.517–9); the “Indian” κακοκυλοτερόδαλεις (= giraffes) which Pausanias (9.21.2–3) claimed he saw (ἐίδσα) had obviously been imported from east Africa, called by the author “India”. As for the various myths and mirabilia shared by India and Ethiopia, they were not definitely rooted in one of these countries. Therefore the notions of ignorance and inaccuracy are hardly relevant to analyze such “confusions”.

It would be silly, however, to deny that a certain number of “confusions” are unquestionably mistakes. For instance, when Pliny (HN 6.174) locates Barygaza in Ethiopia, he is wrong, whatever the reason may be; there is little doubt that Hesychius (s.v. ὄρινθη) mixes up data when he states that rice grows in Ethiopia. However these cases of mistakes do not undermine the main point: as proved by most of the extant evidence, the “old confusion between India and Ethiopia”21 does not primarily result from a lack of knowledge, accuracy or interest: as a matter of fact I hardly imagine how a phenomenon lasting more than ten centuries and taking continuously new forms could rest on such bases. That said let us try to provide a more positive definition of the “confusion”.

2.2 The Confusion as a Form of Knowledge

To characterize this phenomenon in a few words, I would say that regarding a certain number of data, the Greco-Romans did not, or refused to draw a strict boundary line between the southern edge of the oikoumene and the eastern one. By corollary, concerning many other subjects, India and Ethiopia were clearly distinguished and were not mixed up. For example, I have found no “confusion” involving historical characters (e.g., the Indian King Poros, the Brahman Kalanos or the Ethiopian ruler Shabaka [Σαβάκων]). Similarly a respectable number of realia and mirabilia were clearly—and rightly—attributed to India or Ethiopia and not mixed up, e.g., most toponyms, many nomoi, some imported commodities (e.g., malobathron, pepper), various animals and plants etc.

Getting back to the main point, that is the various sorts of parallels between India and Ethiopia, it must be stressed that they appear in a wide range of texts, some of which were written by the most prestigious authors. I have mentioned above Aeschylus (tragedy); Herodotus (history); Strabo and Ptolemy

21 Karttunen 1989, 134.
The So-called Confusion between India and Ethiopia (geography / chorography); Ctesias and Aelianus (specialized monographs); Crates (philology). Many cases of “confusions”, however, appear in philosophy (Arist., Soph. el. 5.167a 1–20; Plut., De tuend. san. praec. 20); poetry (Ov., Met. 4.605–606); discourses and novels (Philostr., V A 6.1—no doubt an author who offered a most sophisticated parallel between India and Ethiopia—; Heliod., Aeth. 6.3.3; Them., Or. 27.337c), not to mention various other treatises (e.g., Theophr., Caus. pl. 3.3.3; Sen., Q Nat. 5.18.2; Diog. Laert. 9.35). The “confusion” is even attested in epigraphy, which proves that to some extent this phenomenon belonged to “popular geography knowledge”. Considering this situation, the “confusion” between India and Ethiopia ought to be defined as a form of knowledge instead of a lack of knowledge. To say it in other words, what we tend to call “confusion” is a significant component of the Greco-Roman depiction and perception of the eastern and southern edges of the world.

This is in my opinion corroborated by the fact that the “confusion” was not only absorbed but also renewed by Christian culture (interpretatio Christiana). Christian authors were aware of India and Ethiopia as described in the pagan tradition. That is why we find in Patristic literature allusions to Pygmies, giant snakes, cinnamomum, black-colored people etc. which do not vary from their non-Christian counterparts. In addition, they generally adopted the spatial designations of their time. That is why when reporting the conversion of the Axumite king or commenting on the location of Saba, they used the name “India” to point out African or Arabian areas (Rufinus of Aquileia, supra, p. 190; Origen. PG 12.1524; Epiph., De XII gemmis 19–21). Christian speculations were also the source of several original “confusions”. For instance, Philostorgius (Hist. eccl. 3.11) argued that Paradise lay in the east by claiming that the most extraordinary animals and plants in the world were produced in Arabia, India and Ethiopia. Let us also mention the commentary of Gen. 2.11–13 (the four rivers flowing from the Paradise) which led some authors to more or less explicitly assert that the Egyptian / Ethiopian Geon (= the Nile) originated in “eastern Etiopia” (e.g., Origen. PG 12.100).

2.3 Were the Greco-Romans Aware of the So-called Confusion?
Schwanbeck thought that some ancient authors had—in vain—attempted to explain the “confusion”. His opinion was based on a text by Strabo (17.3.7)

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23 Dueck 2012, 118.
25 Schwanbeck 1846, 4.
in which the geographer echoed an opinion of anonymous scholars about western Ethiopians: the latter claimed that the Ethiopians of *Maourisia* descended from Indians who had accompanied Heracles—the question of *autochthones* and emigration (*ἀποικία*) was a common topic in ancient ethnography. I have personally detected no trace of explanation in this excerpt. Schwanbeck, however, raised a very interesting issue: were the Greco-Romans aware of this phenomenon? If so, how was it expressed by them?

As for the first question the answer seems to be quite clear: almost all texts in which a “confusion” between India and Ethiopia appears do not show any awareness of this problem, as if it were completely ignored. Let us develop this point with a couple of examples. Diodorus quotes Ctesias (Diod. Sic. 2.14. 4 = Ctesias *FGrHist* 688 F 1b) about waters in Ethiopia which make people tell the truth. As a reader of the *Indika*, he obviously knew that a fountain having a similar property existed in India according to the same Ctesias (Phot., *Bibl.* 47α3–10 = Ctesias *FGrHist* 688 F 45 §31). Diodorus doubts the reality of such a marvel but does not comment on this coincidence. Pliny mentions a series of strange tribes in India and Ethiopia respectively (*e.g.*, Dog-Headed people [*HN* 6.195; 7.23 = Ctesias *FGrHist* 688 F 45pα]; *Himantopodes* [*HN* 5.44; 7.25 = Megasthenes *FGrHist* 715 F 29]). Again these coincidences do not give rise to any observation. Finally, while “the perception of India becomes dimmer and dimmer” according to modern scholars,\(^2\) there is absolutely no commentary about the numerous cases of African Indians in ancient texts, to the best of my knowledge.

There are, however, some parallels between India and Ethiopia which are followed by a short commentary which, in reality, has no connection with the problem that we call “confusion”. Arrian (*Anab.* 6.1.2–5), for instance, related how Alexander believed that he had discovered the Nile’s source until he abandoned this theory. He blamed the king for his precipitation, for he had attempted to solve a major geographical problem with little evidence (*μικροῖς δὴ τισὶ καὶ φαύλοις ὑπὲρ τῶν τηλικούτων τεκμαιρόμενον*), but he did not regard the proximity of India and Ethiopia as an issue. To take another example, Aristotle (*Gen. an.* 2.3.736a 10) corrected (*οὐκ ἀληθῆ λέγει*) Herodotus’ statement (3.101) that Indians and Ethiopians had skin and sperm equally black: their sperm is white, claims the philosopher. The point is that Aristotle who paid attention to the factual rightness was apparently indifferent to the parallel between Indians and Ethiopians, as though it did not pose a problem.

More remarkable is the following text (Plin., *HN* 12.17–20) devoted to ebony. Pliny’s report begins with the question of the production area. Two sources

\(^2\) Mayerson 1993, 170.
were at his disposal: Virgil (India) and Herodotus (Ethiopia). There is no doubt that Pliny perceived the contradiction between these authorities. Nonetheless the coexistence of, or the conflict between the two theories caused him no apparent difficulties: “One of those peculiar to India (unam e peculiaribus Indiae), the ebony, is spoken of in glowing terms by Virgil, who states that it does not grow in any other country (nusquam alibi nasci professus). Herodotus, however, prefers it to be ascribed to Ethiopia (Herodotus eam Aethiopiae intel-legi maluit), stating that the Ethiopians used to pay as tribute to the Kings of Persia every three years a hundred logs of ebony, together with gold and ivory.” (trans. H. Rackham)

Must we, therefore, conclude that the Greco-Romans were completely unaware of what we call “confusion”? I do not think so. A few authors show an awareness of the proximity of India and Ethiopia, but this concept was used to enhance knowledge. I have explained above how the ὁμοιότης of Ethiopia (with Egypt) and India helped Alexander’s companions convert a huge amount of fresh data and observations into a coherent geographical system. I have also mentioned the interpretation of the voyages of Menelaus by Crates. Here is another significant example. In his commentary of Virgil’s Georgica (2.116: sola India nigrum / fert hebenum) Servius focuses on the adjective sola: how could Virgil write that “only India” produced ebony, while it was common knowledge that this material was also imported from east Africa? The answer is as follows: sed Indiam omnem plagam Aethiopiae accipiamus (India means the whole Aithiopia). Servius obviously knew that in his time the name “India” often applied to some areas of Africa: this reality—a “confusion” from our point of view—enabled him to resolve a tricky question in a satisfactory way. In short, unlike us, the Greco-Romans did not consider the “confusion” as a problem or a barrier.

In conclusion, there is a gap between ancient and modern representations of space. The proximity of India and Ethiopia seems bizarre to us. This is the reason why we tend to analyze this phenomenon with the criteria of rightness and accuracy, which is not satisfactory. A better approach consists in regarding the so-called confusion as an—admittedly unusual—form of knowledge. This explains, in particular, a fact that appeared as a tricky issue to some scholars:27 in spite of the huge improvements in both cartography and knowledge of the oikoumene (especially between Alexander’s time and the late second century AD) the “confusion” never stopped developing and renewing itself.

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27 E.g., Arora 1982, 131; André 1949a, 162.
This leads us now to the last part of this inquiry: what were the origins and bases of this phenomenon? How could such a representation of space and peoples be formed?

3 Understanding the “Confusion”

It is a very complex combination of various and intricate factors that led to India and Ethiopia being brought together. For purpose of clarity this section will be limited to a short review of the most important ones.

3.1 Peoples

Let us consider the three following examples: according to Posidonius, Homer divided the Αἰθιοπῆες into two groups for the reason that Indians (= the eastern Ethiopians) were more “well grown” (εὐερνεστέρους) than Ethiopians (Strab. 2.3.7 = Posid. F 13 Theiler); Philostratus (V A 3.20) echoes a tradition saying that the Ethiopians living south of Egypt were originally an Indian people (γένος Ἰνδικόν); Juno, in Seneca’s Hercules furiosus (37–38), alludes to the regions “where the Sun, as he brings back, and where, as he dismisses, colours both Ethiopian races with neighbouring torch” (trans. F.J. Miller). These excerpts all share the implicit idea that Indians and Ethiopians had the same skin color. The dark color of these people (and also of some Libyan tribes [e.g., Strab. 17.3.7]) represented, from the Mediterranean point of view, a remarkable character: quis enim Aethiopas ante quam cerneret credidit? (Plin., HN 7.6). This justified the parallel established between them: this physical feature contributed to establish a parallel between Indians and Ethiopians, in contrast to the rest of human beings, as if they formed an “ethnic community”.

It may rightly be objected that much more information about these peoples had been supplied since Alexander the Great’s time. In particular, some differences in skin color had been recognized: Indians were reported to be less “burnt” than Ethiopians. Some writers had also distinguished the dark skinned southern Indians from the less colored northern peoples (e.g., Arr., Ind. 6.9; Strab. 15.1.13; Manilius, Astr. 4.725). On the basis of such assertions several modern scholars claimed that adjectives pointing to a skin color being not black to the highest degree (e.g., coloratus, decolor) were attributed to Indians only; in contrast, niger or fuscus would specifically apply to Ethiopians.28

This in reality does not call into question the idea of an “ethnic community”. First, as for the lexical argument, it is only relevant to Latin adjectives, since there is no difference in Greek (μέλας describes both Indians and Ethiopians).

28 Snowden 1970, 3; André 1949b, 125–126.
In addition we can see *fuscus* and *niger* being connected to Indians in a number of Latin texts (e.g., Hor., *Sat*. 2.8.14; Ov., *Ars am.* 1.53; Mart., *Ep*. 7.30.4). Now what about the chromatic shades mentioned in several ancient documents? Such observations do not contradict the fundamental idea of the skin color similarity which prevailed in all antiquity: Indians and Ethiopians, despite this difference, were all regarded as being different from the rest of mankind because of their dark color (Arr., *Anab.* 5.4.4; *Ind*. 6.9): being exposed to extremely intense solar radiations, their skin (or their blood: Hyg., *Fab.* 154) would go black like nowhere else on earth (i.e., it was not just a tan). To say it in other words, their skin color made Indians and Ethiopians exceptional, as were some animals and plants living in their countries. This idea was explicitly expressed by Philostratus in the third century AD (*VA* 6.1): “They (sc. India and Ethiopia) are also the haunts of animals not found elsewhere, and of black men—a feature not found in other continents—and we meet in them with races of pygmies and of people who bark instead of talking, and other wonders of the kind.” (trans. F.C. Conybeare)

### 3.2 Space

Many cases of “confusions” result from various peculiarities in the Greco-Roman way of perceiving space. For instance, it was generally agreed that Asia was separated from Libya by the Nile instead of the Red Sea (Arabian Gulf; e.g., Strab., 17.3.1). As a consequence, as Ethiopia stretched out east of the Nile, it belonged to the same continent as India. There is also the division into “climates” (*klimata*), that is a series of land strips parallel to the equator. The Hellenistic geographers tended to pair India and Ethiopia when defining the southern *klimata*: Meroe was located at the same latitude as the southern end of India, the *Kinnamomophoros* (northern Somalia) at the same latitude as Taprobane (e.g., Strab. 1.4.2; 2.1.5). As for the proximity of India and Ethiopia that appears in Aeschylus’ *Suppliants* (283–286), we cannot ascertain which spatial conception supported it: this case of “confusion” may be connected with the idea that the Erythraean Sea was an enclosed body of water (Strab. 1.3.1 = Damastes of Sigeum *FGrHist* 5 F 8).

The idea of maritime unity certainly took an important part in the development of the “confusion”. From the Greco-Roman perspective, the Red Sea and Arab-Persian Gulf were nothing but the extremities of a sea called the Erythraean Sea or Indian Sea. Such a conception implied that Ethiopia and India shared the same maritime space: that is why, for instance, we hear of half-mythic rulers successively defeating Ethiopia, Arabia and India by means of their war ships (e.g., Diod. Sic. 1.55.1–2 [Sesostris]). Undoubtedly the idea

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29 Schneider 2004, 455–461.
of maritime unity contributed to India and Ethiopia being connected or even identified. Let us consider the two following cases.

– Some authors equally considered India and Ethiopia (as well as Arabia) as “countries of the Erythraean Sea”. Indeed various creatures and productions of these areas were referred to as “Erythraean”: for example, myrrh (Plin., HN 12.70); gemstones and pearls (Ps.Lucian, Amores 41; Mart., Ep. 5.37-5); ivory (Mart., Ep. 13.100); “bull”—rhinoceros?—(Ael., NA 2.20).

– Because it was a major route of the Indian trade, the Erythraean Sea tended to be considered as an “Indian sea” (e.g., OGIS 186; Sen., Q Nat. 4a 2.4). As a result several nations dwelling on, or close to the Indike thalassa/mare Indicum (Ethiopians, Troglodytes, Ḥimyarites . . .) could easily be referred to as “Indians”.

The growth of the direct maritime trade between the Mediterranean world and the Indian Ocean countries—following the discovery of the monsoon routes by the Greeks under Ptolemy VIII’s reign—seems to have had another consequence: India and Ethiopia could be perceived as neighboring countries, despite the body of water lying between them. This in fact was the result of a “hodological” perception of space: to merchants and seamen sailing down the Indian Sea as far as, e.g., Muziris, India came directly after Egypt and Ethiopia, which could give rise to the idea of their contiguity (Joseph., BJ 2.385; Lucian, Salt. 19).

Finally it is worth stressing the role of the Homeric division of Ethiopia. As we have seen, the “India / Ethiopia” couple replaced the “western Ethiopian / eastern Ethiopian” one. However the representation of space embedded in the Odyssey, viz. the symmetry of opposites, was not eliminated by the improvements of geography. It certainly contributed to maintain the “confusion”, the Greco-Romans tending to pair India and Ethiopia as symmetrical countries. The most significant example goes back to the third century AD: “Ethiopia covers the western wing of the entire earth under the sun, just as India does the eastern wing ( . . .). We have a proof of the similarity of the two countries in the spices which are found in them, also in the fact that the lion and the elephant are captured and confined in both the one and the other etc.” (Philostr., VA 6.1; trans. F.C. Conybeare).

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30 Eudoxus of Cyzicus (Strab. 2.3.4) if often credited with the first usage of monsoon routes.
3.3  Nature

Among the important questions relating to *physiologia*, I will concentrate on the most important one, viz. the climate, which largely contributed to the development of the “confusion”. Indeed the sun was thought to be the most important of the principles regulating climate. Due to their southern and eastern location in the *oikoumene*, Indians and Ethiopians were believed to receive much more heat than other countries—which explained, as stated above, the particularity of their skin color—. As a matter of fact, the main component of climate (τὴν τοῦ περιέχοντος χράσιν) was solar heat, which impacted on the whole environment (Strab. 2.3.1): the sun affected not only living beings (τὰς τῶν ζῴων καὶ φυτῶν συστάσεις) but also the mineral world (see Posidonius, supra, p. 191). As a consequence it was commonly agreed (e.g., supra, Philostratus) that India and Ethiopia (as well as Arabia) produced similar animals, plants, aromatics etc. Even *mirabilia* were to some extent affected by this conception, as we are told by Pliny (*HN* 6.187 = Posidonius?): “It is by no means surprising that the outermost districts of this region (viz. Ethiopia) produce animal and human monstrities (*animalium hominumque monstrificas effigies*), considering the capacity of the mobile element of fire to mould their bodies and carve their outlines.” (trans. H. Rackham)

We know, however, that Alexander’s companions (e.g., Aristobulus, Onesicritus) took the view that India, having a larger amount of humidity, was more fertile than Ethiopia. That is why Onesicritus stated that Indian animals, either terrestrial or aquatic, were bigger than Ethiopian ones (Strab. 16.1.22 = Onesicritus *FGrHist* 134 F 22). However this difference is of less importance, in comparison with solar radiation, because, according to the same Onesicritus, only solar heat enables India and Ethiopia to breed exceptional creatures and products (along with Arabia) e.g., *kinnamomon*, nard and other aromatics.31

Additional remark: the idea that animals and plants were similar in India and Ethiopia was all the more easily accepted as they were not accurately named. In particular, animals of different species (in the modern meaning of the word) were commonly given the same name, however different they may be: all Psittaciformes were equally called *psittacus*/*ψίττακος*; the rhinoceros and an unidentified species of buffalo were both referred to as ταῦρος (Ael., *NA* 2.20; Diod. Sic. 3.31.2 = Agatharchides *GGM* 1 152); it is very likely that the name *cinnamomum* designated more than one kind of spice etc. Arrianus (*Ind*. 15.1–3) was aware of this issue, as the following excerpt shows: “The

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31 Note that the fact that Taprobane and Ethiopia (κιννάμωμον φερούση γῆ) have the same climate (τὴν γὰρ χράσιν τῶν ἀέρων παραπλησίαν εἶναι) also proves that they are located on the same latitude (Strab. 2.5.14: 35).
Indians regard the tiger as much stronger than the elephant (…). The Indians record that the tiger is in size as great as the larger horse (…). Those, however, which we see and call tigers, are dappled jackals, but larger jackals (trans. E.I. Robson). Parallels between India and Ethiopia were necessarily made easier in such conditions.

I hope this short paper has shed some light on how the Greco-Romans perceived the southern and eastern edges of the inhabited world. Even if there are true cases of error and vagueness, I think it important to analyze the so-called confusion as a specific representation of space in order to properly assess the value of the ancient descriptions of these regions. This phenomenon shows that, from the Mediterranean perspective, the eastern and southern parts of the inhabited world had a lot in common: unlike the other fringes of the world, the countries bordered by the Erythrean Sea were seen as forming a coherent whole in many respects. In its own way this phenomenon may express the idea of the unity of the Indian Ocean, which today supports various studies in global history.

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32 See also the ΤΙΓΡΙΣ represented on the Palestrina mosaic.
33 Cosm. Ind., 2.29: τὸ νότιον καὶ ἀνατολικώτερον μέρος τῆς γῆς.
C. Geography and Politics in the Roman Empire
CHAPTER 12

Marcus Vipsanius Agrippa and his Geographical Work

Pascal Arnaud

The figure of Marcus Vipsanius Agrippa, co-regent of the empire, child-friend and son-in-law of Augustus, has won a leading place in the academic image of Roman geography, far beyond Pliny and Mela, whose texts have lasted until the present, but there is an odd discrepancy between the discretion of ancient historiography about Agrippa’s work and the importance ascribed to it by modern historiography.

Agrippa’s geographical work has been the matter of an extensive bibliography since the late XVIIIth century. Until recently, and since the late XVIIIth century, it was based upon the conviction that this work was “official” and composed of a secret part and a world-map drawn according to these notes and displayed in the porticus Vipsania, built after Agrippa’s death. This map was thought to have been at the origin of the tradition leading to the Tabula Peutingeriana and to the Itinerarium Antonini; according to Detlefsen, it was displayed in every city of the empire and became a stereotype: “the” Roman world-map, leading scholars to recognize its influence in every later mention of a map, including medieval maps.

There was supposed to have been a relationship between the secret part of Agrippa’s enterprise and a survey of the world ordered by Augustus, mentioned in two medieval booklets derived from Julius Honorius’ Excerpta eius Sphaerae uel continentia. The idea arose, in mid-XIXth century Germany, that Agrippa’s map was illustrative of a new relationship between power, space

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1 The current chapter summarizes results published in a much larger article. The reader will find more details and a comprehensive bibliography (in addition, Gautier-Dalché 2008; Arnaud 2013) in this article (Arnaud 2007–2008).

2 Mannert 1799, 123–124; Mannert 1824, 6; Frandsen 1836; Ritschl 1842; Mommsen 1851, 101–103; Schweder 1893; Schweder 1903; Pallu de Lessert 1909, 226; Gross 1913; Kubitschek, 1919a, 1919b; Trouset 1993; Weber 1976; Calzolari 1996.

3 Müllenhoff 1856, 1875; Schweder 1876, 1878; Detlefsen 1906; Gross 1913, 87; Stahl 1955.

4 Ritschl 1842; Detlefsen 1877, 1884, 1906; Nicolet 1988; Nicolet and Gautier-Dalché 1987; text of the late booklets in Riese 1878, 21–23 et 24–55 A and B.
and its presentation. This was still the cornerstone of the more recent interpretation by Nicolet.5 Its main basis was the identification with Agrippa of an anonymous writer quoted by Strabo as “the Chorographer”, whose fragments could to some extent support the earlier idea of some kind of a relationship with land-itineraries. Some have identified this Chorographia (Agrippa’s map in their interpretation) with the Chorographia assigned to Augustus by a later booklet, known as the Divisio orbis terrarum, and very close to another booklet, known as the Dimensuratio provinciarum, both presenting strong parallels with Agrippa’s fragments and with Orosius.6 Not only did Agrippa’s map turn out to be a mere plan of Augustus, but it was also consecrated as “the Roman world-map”, a source for any further map as well as for Pliny and Mela.7

The complex relationship between all these elements supposed a two-branched family tree of the descent of Agrippa’s map, one from his supposed preparatory notes, or secret book, the other from the public map. The Quellenforschung proved itself unable to put together this scheme and the relationships between other authors—especially Pliny, Varro and Mela. The emergence of new sources such as the imperial statistics, including the Formulae provinciarum,8 not only failed to generate any satisfying solution, but even led to a heightened state of confusion. As a result, scholarship was burning treasures of erudition to support epic fights between brilliant minds such as Schweder, Detlefsen,9 Oehmichen or Klotz10 about what seem to have been details with respect to the unchallenged pattern of Agrippa’s map and its supposed posterity, as if this had become a postulate. The questions were then: did Pliny rely on Agrippa’s map only, as Detlefsen thought, or on a text different from the map, as is Klotz’s opinion? Who was the chorographer?

Of these prevailing historiographical patterns, only a few have actually been left unchallenged during the last decades. The Quellenforschung methods and the reconstructions it has produced have been rightly criticized by K. Sallmann who has with great accuracy argued against Klotz’s method and conclusions. These he proved to be “of great erudition but erroneous”.11 The story of Augustus’ surveyors, also present in the Hereford map, is now often

6 Müllenhoff 1856.
7 Schweder 1876, 1878, 1883, 1888, 1892, 1893, 1895, 1897.
8 Jullian 1883; Cuntz 1888, 1890; Detlefsen 1908a; Christol 1994; Sallmann 1971, 95–107.
9 Detlefsen 1877, 1883, 1884, 1885, 1886, 1901, 1906, 1908b, 1908a, 1909.
10 Klotz 1906, 1931.
considered as a medieval invention,\textsuperscript{12} and the existence itself of Agrippa’s map has been challenged.\textsuperscript{13}

It thus appears that the nature and scope of Agrippa’s work are still very unclear, as is the importance it actually had for the history of geography. An accurate re-examination of the fragments is the only way to distinguish between mere postulates and founded hypothesises.

1 Agrippa’s Fragments and Posterity

1.1 Fragments

The list and number of fragments attributed to Agrippa varies from editor to editor,\textsuperscript{14} our unique direct source about Agrippa’s geographical work being Pliny the Elder. He names Agrippa as his source in not less than 32 passages, mainly in books III, IV, and VI, and never in book II. Just like any fragmentary work, Agrippa’s poses the problem of the definition of the relationship between the preserved fragments and the original. First, we must have in mind that fragments are the result of a selection process. The impact of this selection process is higher when the selection has been made by a single author. The number of times Agrippa is quoted makes him the main explicit source of Pliny’s geographical books (3–6). This did not happen by chance. Not only was Agrippa illustrative of the superiority of Rome’s contribution to geographical knowledge with respect to the previous Greek one. He was also the tongue of truth, and the God Augustus was his warranty.

Even when a piece of information is clearly attributed to Agrippa, it is nevertheless often difficult to determine how much Pliny is actually indebted to Agrippa, and to what extent information attributed to other sources by Pliny or by modern historiography may have been relayed by Agrippa quoting other authors. In at least two passages it can be demonstrated that Agrippa was quoting Polybius, and probably discussed him.\textsuperscript{15} Agrippa cannot be reduced to original raw data. He was also depending upon previous authors, whom he did not always quote.

\textsuperscript{12} Birkholz 2004; Gautier-Dalché 2008.
\textsuperscript{13} Arnaud 1990, 993–1297; Brodersen 1996, 268–287.
\textsuperscript{14} Editions of the fragments: Motte 1872; Partsch 1875; Philippi 1876; Schweder 1876; Riese 1878, 1–8; Detlefsen 1906; Klotz 1930–1931; Arnaud 1990, 993–1297.
\textsuperscript{15} \textit{HN} 5.9–10 and 6.207. See below.
It is obvious that Agrippa was used as a source in other passages where he was not named by Pliny. Klotz reached a total number of 66 fragments. These include three distinct groups of texts.

Some are simply correlated to data surely attributed to Agrippa. It happens that the sum of data provided without authorship coincides with the exact amount given by Agrippa.

Another group of fragments has been derived from two late imperial booklets. The *Dimensuratio provinciarum* (*Dim*)\(^{16}\) is known through three manuscripts. The first two are copies of one and the same lost manuscript. This presented the text of the *Dimensuratio* in the form of abstracts from an older manuscript.\(^{17}\) The third, which is also the oldest one (xiii\(^{th}\) cent.), attributes the text to a Hieronymus *presbyter*.

The text of the so-called *Divisio Orbis terrarum* (*Dv*)\(^{18}\) belongs to the same xiii\(^{th}\) century manuscript as the *Dimensuratio*, and was entirely quoted by Dicuil slightly after 825 AD in the first five chapters of his *Liber de mensura orbis*. It ends with the epigram of two cartographers who, by order of Theodosius II, had realized a map, probably for the University of Constantinople.\(^{19}\)

Müllenhoff considered that these two works belonged to the same tradition, that they were directly dependent upon Agrippa’s map and had not been influenced by Pliny. It is certain that some expressions that seem characteristic of Agrippa’s style can be found, mainly in the *Dimensuratio*. These show some relationship with Orosius and Isidorus and with a small world-map preserved in a late viii\(^{th}\) century map, the ms. Vat. Lat. 6018.\(^{20}\) There is little doubt that they belong to the same tradition, although they diverge entirely in some areas, which are always the ones described by Pliny. This suggests a possible relationship with Pliny at some step of the tradition. The *Divisio* is a wider compilation that probably relies upon another tradition as far as the islands are concerned. The *Dimensuratio* is generally closer to Agrippa as quoted by Pliny, but the divergence regarding measurements and the fact that the more characteristic expression of Agrippa is found also in one passage (*Dim* 9) where Agrippa apparently did not use it (Plin. *HN* 4.91) suggests that the link between these booklets and Agrippa is not as direct as Müllenhoff thought.

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16 Riese 1878, 9; Uhden 1933.
17 *Dimensuratio* (*Demonstratio L*) provinciarum quae non erat in praecedenti codice sed de antquissimo libro excerpta.
18 Riese 1978, 15; Müllenhoff 1856; Schweder 1876.
20 Klotz 1930; Uhden 1933.
In any way, we cannot consider these two works on a whole as reliable testimonies of Agrippa's lost work unless when Pliny confirms them.

A third group of fragments supposed to go back to Agrippa is provided by the so-called “Chorographer”. The editors of the fragments have all considered them as part of the fragments. In five passages, all relating to southern Italy and to the major neighbouring islands, Strabo\textsuperscript{21} quotes an anonymous author who used to express distances in Roman miles, even at sea, as Agrippa probably did. In a sixth passage (6.2.11), he just mentions the *Chorography*, as if this title was enough to allow the identification of the source he had used. In addition to these, Riese thought that any passage including distances in Roman miles found in Strabo possibly came from the same author, which is highly debatable, given that Polybius used to express some distances in miles as well.

Most scholars have considered that this *Chorography* was the *orbis terrarum* (\ldots) *quem diuus Augustus primus omnium per chorographiam ostendit* (Dv 1), in other words the *Chorographia Augusti*, which was supposed to be the same as Agrippa’s map. They have interpreted a passage of Strabo (2.5.17) describing the “chorographic map” (ὁ χωρογραφικὸς πίναξ) as a mention of “the map of the Chorographer”.\textsuperscript{22} This passage has actually no relationship at all with the Chorographer, nor with Agrippa or any particular map. It takes place in a very general opposition between geography and chorography.\textsuperscript{23}

A few scholars have argued against the identification of this anonymous chorographer with Agrippa.\textsuperscript{24} Most supporters of the identification of Strabo’s chorographer with Agrippa have Unfortunately been satisfied with the criticism of the unlikely identifications to support their own view.

Actually, it is very unlikely that Strabo knew Agrippa as a geographer; nor did he know his map. In his description of the *Campus Martius* Strabo ignores even the existence of the *porticus Vipsania*.\textsuperscript{25} A comparison between the Chorographer’s and Pliny’s data has led K. Sallmann to the conclusion that Strabo’s chorographer could not be Agrippa.\textsuperscript{26} Where it is possible to compare both authors, they rarely coincide and often diverge, unless modern editors correct the values given by the manuscripts, which has often been done.

\textsuperscript{21} 5.2.7; 5.2.8; 6.1.11; 6.2.11; 6.3.10.
\textsuperscript{22}  See above, notes 4–7, and Riese 1878, xi; Klotz 1930–1931, 40.
\textsuperscript{23} Prontera 2006a.
\textsuperscript{25}  Wiseman 1979.
\textsuperscript{26}  Sallmann 1971, 106, n. 42, 255.
Further examination shows that one of the fragments allows a trustful comparison between Agrippa’s data and the Chorographer’s. It has long been demonstrated\textsuperscript{27} that the value of the circuit of Sicily attributed to Agrippa by Pliny (\textit{HN} 3.86) is equal to the sum of the lengths of the three sides given in another passage (\textit{HN} 3.87) and that this implies that the latter also came from Agrippa. We have shown not only that the values do not fit at all together, but also that the forms of some place names are not the same in Strabo and Pliny.\textsuperscript{28}

Strabo also ignores the existence of the Vistula, while Agrippa knew the river and is thought to have been the first to mention it. It seems therefore absolutely impossible that the anonymous Chorographer quoted by Strabo was Agrippa.

As a consequence, the whole system built upon the \textit{Chorographia} (including the \textit{Chorographia} of Augustus) falters together with the main clue of a possible strong relationship with land itineraries, and Agrippa’s work looses part of his impact and posterity.

2

\textbf{Agrippa’s Work: Contents and Conception of the World}

\textbf{2.1 \ The Contents}

Enough data surely derived from Agrippa has been preserved to allow a rough reconstruction of its contents, within the limits of Pliny’s principles of selection.

The more visible and larger part consisted of measurements. This is not surprising: measurements were the basis of the Hellenistic tradition of geography. These concerned various kinds of spaces. Some related to the usual three continents (Asia, Europa, Africa).\textsuperscript{29} Agrippa also gave the distance between Gades and Issus in a straight line (\textit{HN} 6.207). Since Dicaearchus, this line has been called the \textit{diaphragma}. It was both the basis for the evaluation of the length of the inhabited world and the axis along which regions were assembled to form a schematic world-map. The majority of preserved measurements relates to these large regional entities very similar to Eratosthenes’ \textit{sphragides}, which are the only subject matter of the \textit{Divisio} and \textit{Dimensuratio}. They often follow the administrative borders of provinces but do not always coincide with these. We find groups of provinces, as in Asia Minor or the Three Gauls, still bearing

\textsuperscript{27} Detlefsen 1906, 63–65; Klotz 1930–1931, 405–407.
\textsuperscript{28} Arnaud 2007–2008, 63–64.
\textsuperscript{29} Plin., \textit{HN} 5.40: Africa; extension of Africa and Asia from the Mediterranean to the south.
the old name *Gallia Comata*,\(^{30}\) or parts of a province, as perhaps in Cyrenaica,\(^{31}\) actually grouped with Crete to form a joint administrative province. Provinces were often measured as well: Agrippa gave the dimensions of *Illyricum*,\(^{32}\) *Gallia Narbonensis*,\(^{33}\) and *Baetica*.\(^{34}\) The recent discovery of an important inscription\(^{35}\) has shed new light on the mention of *Lusitania cum Asturia et Gallaecia* (*HN* 4.118). This edict mentions an ephemeral province named *provincia Transduriana*, whose borders apparently exactly coincided with those of the group mentioned by Agrippa. This province lasted from 22/19 BC to 15/13 BC, when the new provincial organization placed *Asturiae* and *Gallaecia* into *Hispania Tarraconensis*.

Other distances belong to the most usual categories developed by Classical and Hellenistic geography, and included circuits of islands and seas, distances between islands and capes, and distances between cities or capes common to the whole periplographic description. These include rather small details, such as the measurements of the so-called *Dromos Achilleos*, an 80 miles long peninsula (*HN* 4.81). It is not certain, but likely, that the mention of the shape (*ad for-mam gladi*), which typically refers to Roman culture, was also Agrippa’s. That kind of comparison is very common in Hellenistic geographic descriptions.

As far as we know, none of these distances relies strictly on data gathered from itineraries, but rather on data found in *periploi*. It has been argued that some distances in Africa, in the Near East or in Italy had been calculated on the basis of *itineraria*.\(^{36}\) A comparison not only with preserved ancient itineraries, but also with other data found in geographers such as Strabo, shows that Agrippa’s data are not the sum of distances along Roman roads, but echo data found in the Hellenistic tradition. The only value really close to that of land itineraries is the breadth of Italy between the Var and Arsias rivers (*HN* 3.43). It unfortunately relies on a road, the *via Julia Augusta*, whose milestones are not older than the late months of 13 or rather the beginning of 12 BC, definitely too close to Agrippa’s death to be considered seriously as a source of Agrippa,

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\(^{30}\) *HN* 4.105.

\(^{31}\) *HN* 5.38, without mention of authorship.

\(^{32}\) *HN* 3.150.

\(^{33}\) *HN* 3.37.

\(^{34}\) *HN* 3.16.

\(^{35}\) *AE* 1999, 915 = *AE* 2000, 760 = *AE* 2007, 785. On this inscription, see López Barja de Quiroga 2010, with bibliography.

\(^{36}\) Klotz 1930–1931, 389 (*HN* 3.16); 393–4 (*HN* 4.105); 439 (*HN* 5.25, doubtful, but using the words *qua cognitum est*; 446 (*HN* 3.132 doubtful); 451–3. All the parallels are but very rough approximations. No exact coincidence (or even close approximation) is recorded between itineraries and data, whose attribution to Agrippa is not always well established.
who is not an ascertained source of this passage. It is noteworthy that Pliny as well ignores itineraries as a real basis for geographical knowledge, although Polybius and Artemidorus did. Furthermore, no extant fragment of Agrippa relates to distances between inland places. Even the width of Gaul, where Agrippa himself had built the road between Lyon and Boulogne (Gesoriacum) is apparently calculated according to earlier maritime data. The indication of orientation in association with a maritime distance\(^{37}\) was the basis of the work of Timosthenes of Rhodes, and is a common feature of the periplus of Syria and Asia Minor in the \textit{Stadiasmus Maris Magni}. All the distances make Agrippa part of the Hellenistic tradition of geography rather than the starting point of a new one.

Information about ethnic origins was also present in Agrippa's work, although only one piece of information of that kind has survived. It establishes that Agrippa thought that all the people along the shores of Baetica were of Punic origin.\(^{38}\) This echoes directly a passage by Strabo (17.3.15), who apparently ignored Agrippa but thought of himself as a continuator of Polybius, a known source of Agrippa, and information of Varro summarized by Pliny in the same chapter (\textit{HN} 3.8). Here again, Agrippa belonged to a well-established tradition.

The words used by Pliny to introduce Agrippa's quotation are the same as the ones he uses to introduce other geographers, which confirms that his account was of the same nature. Some of these nevertheless reveal some particular aspects. When he says \textit{computavit},\(^{39}\) Agrippa probably had calculated new data after a combination of several ones. When he says that Agrippa has added a certain number of miles to the evaluation of a previous geographer,\(^{40}\) Agrippa was probably quoting this predecessor—here Varro—and arguing against him. When Pliny writes \textit{credit}, or \textit{existimavit}, he then suggests that Agrippa was relying on less trustful information and that he was presenting his data as an opinion.\(^{41}\) This verb is generally used in passages relating to the

\(^{37}\) \textit{HN} 4.60: \textit{a Carpatho insula promunturio Samonio LX in favonium ventum.}
\(^{38}\) \textit{HN} 3.8: \textit{Oram (Baeticae) in uniuersum originis Poenorum existimauit Agrippa.}
\(^{39}\) \textit{HN} 4.105 (\textit{Gallia Comata}). The verb always expresses, in Pliny, data derived from the combination of several data (see also \textit{HN} 2.171; 2.174; 6.209). It is noteworthy that Pliny (\textit{HN} 6.206) opposes \textit{taxat} (introducing a raw distance of Agrippa) with the result of his own calculation after Agrippa's source (Polybius).
\(^{40}\) \textit{HN} 4.45: \textit{Ab Histri ostio ad os Ponti passuum D alii fecere—Agrippa LX adiecit. These alii in fact are Varro according to Klotz 1930–1931, 448 on the basis of \textit{HN} 4.78.}
\(^{41}\) When Agrippa gives a value from the shores of the ocean, without saying that this was an opinion, nor giving the precision \textit{qua cognitum est}, then Pliny points out that this measurement is actually uncertain (\textit{incerta: HN} 4.91).
edges of the earth\textsuperscript{42} or to unverifiable information. Agrippa then opposed the certain (\textit{certum} and \textit{cognitum}) and the uncertain, or \textit{opinio}, this including the likely; he probably excluded \textit{fabulae}, as Pliny pretended to do. When Agrippa measured Africa “as far as it is known”, he implicitly rejected any testimony about the circumnavigation of Africa assigned to Hanno of Carthage and to Eudoxus of Cyzicus, but accepted the partial one made by Polybius at the orders of Scipio, who was also a warranty of Polybius’ testimony.

This fits an important aspect of the originality of Agrippa’s perspective and work, one that has justified, along with Agrippa’s \textit{diligentia} and Augustus’ validation of the work, the choice of Agrippa as Pliny’s most prominent and visible source of information. One of the most specific expressions of Agrippa was apparently \textit{qua cognitum est},\textsuperscript{43} always used by Pliny in passages surely or likely relying upon Agrippa, but never in relationship to any other author. It has been long noticed that this belongs formally to vulgar Latin, altogether

\begin{itemize}
\item \textsuperscript{42} Sallmann 1971, 175: Britain (\textit{HN} 4.102); Ethiopia (\textit{HN} 6.196); ethnic origin of the people dwelling on the shores of Baetica (\textit{HN} 3.8).
\item \textsuperscript{43} Klotz 1930–1931, 422. See \textit{HN} 5.38: \textit{Finis Cyrenaicus Catabathmos appellatur, oppidum et vallis repente convexa. ad eum terminum Cyrenaica Africa et Syrti minore decies LX in longitudinem patet, in latitudinem qua cognitum est DCCCCX}, where no author is mentioned, but Klotz and Detlefsen have seen that the same value is given as by Agrippa in Pliny (\textit{HN} 6.209: sed quoniam in Cyrenaica eius parte DCCCCX fecit Agrippa, deserta eius ad Garamantas usque, \textit{qua nosceban tur, com plectens}), who then uses the past \textit{qua nosceban tur} to indicate the progress in knowledge since Agrippa;\textit{HN} 5.25: \textit{Sabrata contingens Syrtim minorem, ad quam Numidiae et Africab ab Ampsaga longitudo DLXXX, latitudo qua cognitum est CC} (same values in \textit{Dv} 25 et \textit{Dim} 26, without the expression);
\item \textit{Dim} 8: \textit{Dacia Getica finiuntur ab oriente desertis Sarmatiae, ab occidente flumine Vistula, a septentrione Oceano, a meridie flumine Histro. Quae patent in longitudine milia passuum CCLXXX, in latitudine, qua cognitum est, milia passuum CCLXXXVI} (cf. \textit{HN} 4.81: Agrippa totum eum tractum ab Histro ad oceanum bis decies centum milium passuum in longitudinem, quattuor milibus quadringentis in latitudinem, ad flumen Vistiam a desertis Sarmatiae prodidit, where the limits fit with Agrippa’s, not the measurements);
\item \textit{Dim} 9: \textit{Sarmatiae et Scythiae Tauricae. Finiuntur ab oriente iugis montis Tauri, ab occidente flumine Borysthene, a septentrione oceano, a meridie provincia Pontica; quae expansuntur in longitudine milia passuum DCCCCCLXXX, in latitudine qua cognitum est CCCCCXXVI} where Agrippa probably did not use it (cf. \textit{HN} 4.91: \textit{Sarmatiae, Scythiae, Tauricae, omnisque a Borysthene amne tractus longitudo DCCCCCLXXX, latitudo DCCXVI a M. Agrippa tradita est. Ego incertam in hac terrarum parte mensuram arbitror};
\item \textit{HN} 6. 37 (cf. \textit{Dim} 6): Agrippa Caspium mare gentesque quae circa sunt et cum bis Armeniam determinatas ab Oriente oceano Serico, ab occidente Caucasi iugis, a meridie Tauri, a septentrione oceano Scythico, patere qua cognitum est CCCCCXX in longitudinem, in latitudinem CCXC prodidit.
\end{itemize}
with an original use of the verb *patere*, and that the use of vulgar Latin used to be an important characteristic of Agrippa's style. That this expression comes from Agrippa is confirmed by the fact that when, in one occurrence, Pliny quotes Agrippa about a measurement involving the edges of the earth, without the precision *qua cognitum est*, he remarks that in such an area, the measurement was necessarily uncertain (*incertam*). In other words, in most passages, Agrippa used to state clearly the limits of his knowledge.

He thus appeared closer to Carneades' thought and to the New Academy than to the Stoicism that was prevailing in Eratosthenes and later in Strabo and, as a consequence, in the modern perception of ancient geography.

### 2.2 Agrippa's Work: Sources and Date

Defining sources is always a difficult exercise: no ancient geographer actually owned the data he was publishing under his own name. Even people known to have travelled, such as Artemidorus, were using second- or third-hand material. The fact that data are found under the authority of let us say Artemidorus does not necessarily mean that these did not circulate before him, nor that they were known through his direct or secondary use. A good example of how difficult and dangerous the *Quellenforschung* is, is provided by Eratosthenes and Timosthenes. Both got lost in the passage of time. There are numerous quotations of the former, much fewer of the latter. But Marcianus Heracleensis (*GGM* I 566), who apparently had direct knowledge of both, tells us that the former’s list of coastal places was entirely derived from the latter’s. It is therefore not easy to assign a measurement to a single author, and to consider it his footprint.

As the contents of Agrippa’s work relate to the same places as the whole Hellenistic and Republican tradition of geography, he was indebted to a large number of authors and anonymous works. There was a huge common ground of values which did not strictly belong to some identified author. A value transmitted let us say by Artemidorus may well have been found by him in previous works and/or transmitted by other sources. For that reason, any attempt to build up a *Quellenforschung*-like enquiry would be not only hazardous but also misleading. It is certain that measurements can provide parallels. They never prove the existence of direct relations between two authors.

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44 This rare verb is also used in the *Dimensuratio* and *Divisio*, and by Suetonius in a passage (*Iul. 25*) likely derived from Agrippa (through Pliny?).

45 Bardon 1956, 78; Roddaz 1984, 574.

46 *HN* 4.91.
The only author surely not only used, but also quoted by Agrippa was Polybius. Pliny attributes to Agrippa a long passage which appeared to actually be an excerpt of Polybius’ narrative of his travel along the Atlantic shores of Morocco after the fall of Carthage. A reasonable conclusion is that Agrippa actually quoted Polybius and that even the introductory paragraph about Polybius’ travel comes from Agrippa. Polybius was also the main source of Agrippa’s evaluation of the diaphragm from Gades to Issus (HN 6.206). Pliny does not seem to have had any direct knowledge of Polybius, and some have thought that Pliny knew Polybius through two Latin sources, Varro being one of them (Klotz 1906, 39–40). It is likely that Agrippa (who may have partly quoted Polybius through Varro) is the other one.

It is likely that, as most geographers before and after him, Agrippa had copied and pasted a significant number of passages of various authors, among them Polybius: most of Agrippa’s distances, although expressed in Roman miles, have actually been converted from data expressed in stades and derived from the Greek periplographic tradition, used by most authors since Timosthenes (and before him by Dicearch). The distances from the capes of Crete (HN 4.60) obviously go back to that tradition. Most of Agrippa’s data rely on that corpus, often anonymously; the different ways the conversions were made (approximations or exact conversions) show that Agrippa had probably found at least some of these data in one or more Latin sources.

It is for that reason not easy to determine which authors he has used directly. As we have seen, Pliny often quotes Artemidorus but does not seem to have had any direct knowledge of him (Detlefsen 1906, 35). The only certain convergence between Agrippa and Artemidorus was that they both made Catabathmus the limit of Africa and Egypt (HN 5.38; 6.209).

The length of the Pelusiac isthmus (HN 5.65) is the same as Posidonius’ (Strab. 17.1.21 = FGrHist 87 F 101b) but this does not prove any direct use of this author.

Pliny often opposes Eratosthenes’ and Agrippa’s measurements (e.g. HN 6.164). Several fragments are thought to have been derived from Eratosthenes. There is little doubt that Agrippa relied on Eratosthenes’ method and to some extent on his data, but it is unlikely that he had any direct knowledge of Eratosthenes. What he knew he probably learned from Polybius and Varro and we cannot exclude that Pliny sometimes quoted these two authors and Eratosthenes through Agrippa.

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47 HN 5.9–10; Riese 1978, 5 rightly attributed the whole passage to Agrippa. Klotz (1906, 15) later understood that the second part came from Polybius because of the specific use of the value of 450 stades per day of sailing (Pédech 1955, 321; Arnaud 2005, 83).

Klotz\textsuperscript{49} considered that Agrippa knew Artemidorus only through Varro. Varro was clearly Agrippa’s source for the distance \textit{a Calchadone ad Phasim} (\textit{HN} 6.3). Regarding the fragments 49–52, Klotz (\textit{HN} 4.45; 4.77–78; 6.103) establishes a relationship between Artemidorus’ and Varro’s data and Agrippa’s, suggesting that Agrippa had saved most of the data transmitted by these two authors and introduced but minor corrections to them. As for the Euxine area, Klotz\textsuperscript{50} was undoubtedly correct when he considered that Agrippa was mainly dependent upon Varro and Cornelius Nepos.

These elements make Agrippa everything but a revolutionary figure in the landscape of ancient geography. Even if he probably provides the first notice of the Vistula, his vision of the masses of the Gauls and Germania did not challenge the previous consensual ones. R. Moynihan (1985, 155) could rightly write “here we find reasserted all the stock elements of the Greek geographical tradition.” Agrippa’s sources of information were rather limited in number, rather traditional and mainly second-hand. It is therefore not surprising that his conception of the known world is not very original if compared to the previous ones. The major changes consisted in the inclusion of the administrative districts as a frame of the known world, instead of the purely nature-based \textit{sphragides} of Eratosthenes, and in a geography of the further West now considered as ascertained thanks to the Roman conquest. But these districts were in turn limited by natural features.

The image we can have of his work is that it was at the same time very conventional and largely second-hand, as far removed from the secret weapon some have seen in Agrippa’s work as it is from any huge innovative survey of the world ordered by Augustus.

\subsection*{2.3 Agrippa’s Conception of the World}

The data gathered from the preserved fragments allow at least a rough reconstruction of the size (if not of the exact shape) of the known world and of its main components according to Agrippa.\textsuperscript{51} They show that this, although longer than that of Eratosthenes, but closer to Polybius’ views, did not challenge Eratosthenes’ general conception and image of the inhabited world, nor that of its single parts. This could be entirely inscribed within the northern hemisphere and it could well be surrounded by the Ocean, forming the island Eratosthenes supposed it was.

\textsuperscript{49} Klotz 1906, 35; 1930–1931, 448 n. 1.
\textsuperscript{50} 1931, 447–449.
\textsuperscript{51} Partsch 1875; Philippi 1880, Taf. 111; Berthelot 1933, 11; Sallmann 1971, 208; Moynihan 1985, 162 fig. 6.
But was it ascertained that the inhabited world was actually an island? We have seen that Agrippa's world is influenced by that of Polybius. Now, we know that Polybius had a very original view of the world. He thought that Africa extended to the south at least down to the equator, where he supposed the Nile had its springs, thus challenging Eratosthenes’ conception of an insular oecumene entirely inscribed in the northern hemisphere. Agrippa was very keen to distinguish between the physical limits of the oecumene and the limits of the knowledge one had of it. As we have seen, he has expressed the latter using the words qua cognitum est “so far as ascertained”. He used this expression to characterize measurements made from the limits of the known world, not from the physical boundaries of the world. Even when these measurements had not reached these physical limits in the north, Agrippa clearly said that these were the Ocean.

It is noteworthy that when the same expression occurs in relationship with the southern limits of the oecumene, Pliny never says that Agrippa had considered the Ocean as the southern limit of Cyrenaica or Africa. Only the later Dimensuratio and Divisio make it a limit. This shows that Agrippa did not decide about the actual limits of the world in that area. He just determined the limits of current knowledge. The known world was not an island, but the oecumene might be. This apparently kept open all options about the southern extension of Africa.

3 Agrippa’s Work: Nature and Scope

3.1 Agrippa: Geography or Chorography?
Preserved fragments clearly make Agrippa the heir of Hellenistic and Republican traditions of geography. He knew the main issues and debates they had faced since Eratosthenes, and was directly or indirectly dependent upon the major geographers of that period rather than upon official documents, either itineraries or secret statistics. On the basis of available evidence, there is absolutely no clue to support the idea that this document had strategic purposes and/or any secret version. As far as we can know from the preserved fragments, this work was very similar to other published treatises as far as the contents (nature of data and data themselves) are concerned. There is absolutely no clue that any secrecy was attached to that work. In a fragment preserved by Strabo, Polybius declared that he would describe the contemporary reality, the location of places (θέσεις τόπων, the latin terrarum situs) and the
distances between them.\textsuperscript{52} This is exactly what Agrippa has done according to his source. Paying no interest to the relationship between the inhabited world and the globe, he was not writing a geography. It is normal from that point of view that he was never quoted by Pliny in book 11.

3.2 \textit{The Text: Preparatory Notes or Geographical Treaty?}

As shown above, the evidence from the fragments clearly indicates that these have their origin in a text rather than in a map (Riese 1876, ix.; Klotz 1930–1931, 44). Even if western Latin medieval cartography shows that maps could give a large space to extended texts, the existence of large quotations of previous authors by Agrippa as well as the number and variety of the indications preserved in the fragments (especially periplographic data) exclude that these have been derived from a map. The idea that they actually come from a lost text has never been seriously challenged, but the nature of this text has been, and still is, under discussion.

My own attempt to date the writing to 13 BC probably relied on debatable arguments. The information available about the \textit{provincia Transduriana} suggests that Agrippa’s information about that area is anterior to the reorganization of the Spanish provinces, which occurred between 15 and 13 BC. The innovative data gathered in the area of Crimea probably rely on the experience of the campaign of 15 BC. If Agrippa had undertaken this work in order to display it at the \textit{Porticus Vipsania}, as Pliny says, then it has necessarily followed the project of the \textit{Porticus}, whose building started only after Agrippa’s death. The work may then have been written in 14–13 BC, in connection with the spirit that led to the dedication of the \textit{ara pacis} Augustae in 13 BC.

It has been widely accepted that this work was only a set of preparatory notes left, maybe unfinished, by Agrippa in order to prepare the monumental realization displayed in the planned \textit{Porticus Vipsania}, whose construction only started after Agrippa’s death, and was achieved by Augustus. This work would have been entitled \textit{Commentarii}. The basis for this hypothesis is one of the few extant \textit{testimonia} about Agrippa’s work. Facing a discrepancy between the measurements of Baetica made by Agrippa and those derived from the data available in his time, Pliny (\textit{HN} 3.17) sweeps away any possibility of Agrippa’s fault as follows:

\begin{quote}
\textit{Agrippam quidem in tanta viri diligentia praeterque in hoc opere cura, cum orbem terrarum orbi spectandum propositurus esset, errasse quis credat et...}
\end{quote}

\textsuperscript{52} Polyb. 34.1.1–5 (quoted by Strab. 10.3.5) ἡμεῖς δέ (…) τὰ νῦν ὄντα δηλώσομεν καὶ περὶ δέσεως τάπων καὶ διαστημάτων: τότε γάρ ἔστιν οἰκείατατον χωρογραφία.
cum eo divum Augustum? is namque complexam eum porticum ex destinatione et commentaris M. Agrippae a sorore eius inchoatam peregit.

Agrippa was a very scrupulous man and has given a special care in this work, when he was planning to display before the eyes of the whole world the world to look at. Who therefore would believe he made a mistake, and with him the deified Augustus? For it was Augustus who completed the portico that contained it, and that Agrippa's sister had begun in accordance with the project and plans of M. Agrippa.

This text explains that it was Agrippa's project to display an image of the earth in a public space—the portico he was planning to build—and that Agrippa's text was part of this project. The second part of Pliny's text is more confusing. The whole sentence refers to the building that was in exactly the place where Agrippa's presentation of the world had eventually been displayed (complexam eum [sc. orbem]), not to the object displayed there. The syntax implies that any information between porticum and inchoatam refers to the portico. Ex destinatione (following the intention, maybe the testament) and commentarii (the formal plans) do not refer to the display but to the building. Since the formula and the use of the full name M. Agrippa look like the ones displayed in public inscriptions, I suspect that the whole sentence is an abridged quotation of the dedicatory inscription of the Vipsania Porticus, where is (i.e. Augustus) is given in place of the full title of the emperor. Thence the god Augustus would have been the warranty of Agrippa's data only because he had achieved Agrippa's project after the death of Agrippa's sister, Vipsania Polla, following at every step Agrippa's plan. This process is just normal. It was the task of the family of the deceased to achieve the monument. Augustus intervened in this affair as the father-in-law of the deceased after the death of Vipsania Polla. It was politically shocking to intervene in monuments relating to another family (Hinard 1992). This is probably the reason why Augustus insisted on the dedicatory inscription about the process that had lead him to achieve the project.

This does not help us to understand the nature of the document displayed in the portico. The verb complector is too vague. The expression orbem orbi spectandum (urbi is an unnecessary correction of the manuscript's text) has been considered as the definite proof that this was a map. It is actually not. The confusion between texts and maps in vocabulary is very common and not by case Pliny (HN 6.211) uses the same verb spectare he had used to introduce Agrippa's purpose when he concludes his own chorographic description of the world, His addemus etiamnum unam Graecae inventionis scientiam vel exquisitissimae subtilitatis, ut nihil desit in spectando terrarum situ, to add to his chorographic
description the list of places along parallels. Given the importance of Agrippa for Pliny, this may be a clue of the similar nature of Pliny’s text and of the object displayed in the Porticus Vipsania. When, four centuries later, the rhetor Eumenes celebrated a map in the portico of the school at Augustodunum, he echoed Pliny, but added the word *depictum* to leave no doubt about the fact that in this case a map was involved. This precision may have challenged Agrippa’s text with this map.

Most scholars have seen in a passage by Pliny (*HN* 6.139) relating to Charax, on the Persian Gulf, a reference to Agrippa’s map displayed in the Porticus Vipsania, quoted as a source: *prius afuit (sc. Charax) a litore stadios X et maritimum etiam Vipsania porticus habet.* It does not matter much that it is unlikely that a map should have allowed to distinguish between a place situated on the shore and a place situated a bit more than one Roman mile inland. The main issue is that this is not the text of the manuscripts, which give the more plausible reading *maritimum etiam ipsa inde portum habet.* The reconstructed text proposed since the XIXth century poses too many philological problems to be acceptable.

Although the existence of a map of Agrippa has long been considered self-evident, this view has been challenged. Pliny does not seem to consider that there was any difference between the text he used of the object displayed at the Porticus Vipsania. The most usual meaning of the verb *proponere*, used by Pliny to characterize Agrippa’s project, is the public display of texts, but Pliny usually uses it about paintings, in one case it refers to a fake Phoenix exposed in the Comitium (*HN* 10.5); the Tabula Siarensis uses it for a *carmen* and a statue. It apparently always characterizes something that can be removed and would exclude anything like a wall-painting or floor mosaics.

It is therefore impossible to demonstrate the existence of a map in the portico, and it is essential to stress that point. But it is likely that a map was at least part of the documents displayed in the Porticus Vipsania. Maps were neither common nor exceptional by the time of Augustus. Above everything, they used

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54 According to Moreau 1988, “la place de l’adjectif référentiel avant le substantif, la métonymie *porticus Vipsania* pour *porticus Vipsaniae forma* et l’emploi de l’inanimé *porticus* comme sujet de *habet* avec objet et attribut de l’objet rendu par *en fait une ville maritime*” would exclude the usual restoration.


56 See, *Cod. Theod.* 2.7.2.1; 2.8.18; 2.10.2; 6.22.2; 6.23.4.2; 11.27 etc.

57 *HN* 1.35; 35.22; 23; 84; 140; 151–152.

58 *AE* 1984, 508, fgt 11, col. b., l. 11 ss.
to be a marker of prestige. It would be strange if the prestige attached to maps, often displayed in porticoes, had not resulted in a map being placed alongside the text. This is a good reason to think of a map. Furthermore, we know from other sources that the association of texts and maps was not exceptional. Nevertheless, it is Agrippa’s text that Pliny had celebrated. It is unlikely that the whole text of Agrippa could have been displayed in the portico, given its probable length, but we can imagine that displaying a monumental map was the solution to an unsolved problem: associating a text with a map whose dimensions could not fit those of a papyrus roll.

3.3  **Agrippa’s or Augustus’ Propaganda?**

Modern historiography has introduced some confusion between Agrippa’s project and Augustus. Augustus is only said to have achieved the project, when Vipsania Polla, Agrippa’s sister, had probably died. The monument where Agrippa’s work was to be displayed by the will of Agrippa belonged to the *gens Vipsania*, not to the *gens Iulia*, and in 7 BC Augustus publicly announced on the *campus Agrrippae* that the *Porticus Vipsania* remained in the hands of the *gens* whose name it bore, and that it was part of a project devoted to Agrippa’s self-presentation. Although Marcus Agrippa was Augustus’ *collega imperii*, the whole project focused on his person.

The making of his public image is probably a main key for the understanding of the project. We know the main components of this public image. Augustus alone was the *triumphator*. As his *collega imperii*, Agrippa was the one who was organizing the subdued world.59 Not only the image of the world after Agrippa showed what later Eumenius (*Pan. Lat*. 9.21.3) could say of the world map at Augustodunum: “For now, now at last it is a delight to see a picture of the world, since we see nothing in it that is not ours.” It also illustrated its ordering into provinces by Agrippa. Agrippa’s world was limited by deserts or by the Ocean, and it had been measured by the Romans.

The choice not to pay attention to unsolved or theoretical problems on the one hand focused on the only world worth some attention: the one open to action and universal power. On the other hand it illustrated the Cato-like image of Agrippa, *uir rusticitati proprior quam deliciis* (Plin., *HN* 35.26), “a man closer to the peasant way of life than to the delights of luxury”, writing the Latin the people spoke. Reluctant to admit any tale, his seriousness (*diligentia* and *cura*) was the key of the Roman *gravitas* opposed to the fantasy of the Greek *levitas*. Agrippa was also the one who wanted to give the *plebs* full access to arts and culture and proposed to publicize pictures and statues owned by the rich in

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villas.\textsuperscript{60} By displaying under the eyes of the world a world-map, Agrippa made public a rare cultural object and realized part of his project. It also proved that Rome had been in the regions Agrippa was describing \textit{qua cognitum est}. To the Roman public, accustomed to the public display of measured and mapped land surveys more than to geographical treatises and world maps, the world tended to become the measured possession of Rome.

Agrippa’s map has left no substantial trace. Agrippa’s work has. It was probably anything but the secret tool some have made of it. Neither has it been the source of any further Roman map or geographical knowledge. For several reasons, including new discoveries in the south and the reaction that followed, the main patterns of later Roman geography, either itinerary-based or deprived of numerical data, belonged to another tradition. Agrippa seems rather representative of the reception of the Hellenistic tradition in the centre of power by the time of the dedication of the \textit{ara pacis}.\textsuperscript{61}

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\begin{itemize}
  \item \textsuperscript{60} Plin., \textit{HN} 35.26.
  \item \textsuperscript{61} Arnaud 2007.
\end{itemize}
CHAPTER 13

The Romans and the World’s Measure

Anne Kolb

1 Setting the Scene

In the early 60s Nero sent explorers to Southern Sudan. According to Seneca (Q Nat. 6.8), the soldiers were instructed to investigate the sources of the Nile, an undertaking instigated by Nero’s great interest in science. Pliny (HN 6.181) and Cassius Dio (63.8.1), on the other hand, both rightly suspected a political motive, namely military reconnaissance for a potential Ethiopian campaign. Dio explains that Nero later discarded these expansionist plans since the enterprise seemed too difficult and time-consuming. The results of the military expedition are nevertheless recorded in detail by Pliny the Elder (HN 6.184): the scouts surveyed a corridor of land extending more than 975 miles south of Egyptian Syene (modern Assuan) and returned to the Emperor with precise measurements of the distances between the towns as well as a map of the country (forma Aethiopiiæ).

Roman assessment of space was largely based on measuring and surveying the territory to be explored. According to the predominant one-dimensional and road-oriented model of spatial assessment this was the only way of determining the extent and structure of geographical regions, allowing for the calculation and implementation of military actions and administrative measures alike. These aims show how narrowly the Romans conceived of geography: its employment was primarily considered for its practical value, be it political, military or administrative.

Due to their extensive conquest of the regions around the Mediterranean (mare nostrum), the Romans ruled an Empire of enormous extent, encompassing about 50 to 80 million people on an area of approximately 6 million square kilometres. Ancient authors from the Republic onwards highlight these vast territorial dimensions as an exceptional achievement and even as a characteristic of the Roman Empire. Already Polybius (1.1.5; 1.2.7; 1.3.9–10; 3.1.4)

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1 Plin., HN 12.18ff.; see most recently Heil 1997, 164–166 for a discussion of the sources and research. He rightly emphasises that soldiers were sent out rather than geographers but also argues that Pliny’s expedition cannot be the same as the one mentioned by Seneca, based on slight differences in the description.
noted the submission of the entire inhabited world (*oikoumene*) under Roman rule, and the Empire’s territory was soon equated with the *orbis terrarum* (Cic., *Phil.* 4.14–15; Mur. 22; Dion. Hal., *Ant. Rom.* 1.3.3; Strab. 6.4.1), soon coming to be described as the *orbis Romanus* from Augustus onwards (e.g., title of *Res gestae divi Augusti*). The consolidation and administrative pervasion of this global Empire was the primary aim of the Roman rulers, an aim they sought to achieve by imposing administrative subdivisions and creating a functional infrastructure for logistics and communication: the provinces, customs areas and self-administering territories testify to this, as does the infrastructure with its roads, waterways and associated structures, which created an expansive and connective network estimated to have spanned 500,000 km or more.\(^2\) This network facilitated travel and made destinations all over the Empire accessible, both near and far, and not only to emperors and their officials, but to everyone.

With this in mind it comes as no surprise that the Romans, unlike the Greeks, had little interest in scientific geography and assessments of the world based on mathematics and physics. The form of Greek geography developed in Roman times likewise largely rejected scientific geography in favour of cultural geography.\(^3\) Authors such as Strabo saw the main functions of geographical information in providing the political leadership with a good basis for its decisions\(^4\) and avoiding errors on account of deficient topographical knowledge (Strab. 1.1.16–17). Leaving aside the small number of known scientific geographers such as Claudius Ptolemy, who drew on Eratosthenes for his attempt at a cartographic representation of the earth’s orb,\(^5\) this pragmatic approach can be traced throughout the descriptive geographies produced by authors of the Republic and early Empire. Intellectuals without specialised knowledge of the field, including Cicero, who gave up his plans of writing a geographical work of his own (Cic., *Att.* 2.6.1 i.a.), considered scientific geography an *obscurior scientia* (Cic., *De or.* 1.14.59). Cultural geography and ethnography, however,

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\(^2\) Forbes 1965, 151, calculates 90,000 km of public roads and a network (together with other road types) of 300,000 km; ORBIS: The Stanford Geospatial Network Model of the Roman World (http://orbis.stanford.edu/#rivertransport ) counts 84,631 km of roads, 180,033 km of seaways and 28,272 km of navigable waters. On Roman roads see Pekár 1968; Rathmann 2003; Quilici 2008; Kolb 2014.


\(^4\) According to Engels 1999, 161–162 this was a topos of Hellenistic historiography also in Polybius; on geography in Polybius see recently Engels 1999, 147–165; Clarke 1999, 77–128.

\(^5\) His surviving handbook of geography (*Geographike Hyphegesis*) unfortunately only details his collection of data for 26 regional maps and a world map; on his method see Geus 2007b, 159–166.
flourished, as is exemplified by the works of Poseidonius and Strabo. Roman generals and politicians required only practically oriented geographical knowledge, as is made clear by the works of Caesar and Agrippa, in which distances as well as length and breadth measurements serve the purpose of assessing and describing the space of the Empire. Besides lists of routes both on water (periploi) and on land (itineraria), we also have various indications that graphical representations of areas (like the forma Aethiopiae Plin., HN 12.18ff. or situs depicti Plin., HN 6.40) were made and used for practical purposes. The comprehensive survey of the Empire traceable in Agrippa's commentarii and in his so-called “world map”, publicly accessible in the Porticus Vipsania in Rome, simultaneously attest to the importance of these measures. Authors such as Pliny the Elder (HN) and the unknown writers behind the Demensuratio provinciarum and the Divisio orbis terrarum (4th cent.) built on these achievements. Both late antique authors note the length and breadth of regions in the oikoumene and provide information about rivers, oceans, mountain ranges and cities. Finally, the Roman desire for structure, based on surveying and subdividing small areas and large regions alike, is still visible even in the 7th century author Isidorus of Sevilla (15.15): Maiores itaque orbem in partibus, partes in provinciis, provincias in regionibus, regiones in locis, loca in territoriis, territoria in agris, . . . . dividerunt.

By contrast with these geographical descriptions, however, other sources shed some light on the theory and practice of actual land surveys. These include the works of the surveyors with their technical and legal observations, but also inscriptions that document the establishment of borders based on the surveying of territories. Furthermore, there are various forms of evidence related to roads, including itineraries, building inscriptions and milestones,

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7 Caesar’s geographical descriptions are mainly to be found in Gall; the question of suspected interpolations of his geographical passages is conveniently summarised by Krebs 2006, 115 n. 21. For the work of Agrippa see e.g. Engels 1999, 359–377; Häger 2007; now Arnaud (in this vol.).
8 The existence of ancient maps is most recently postulated by Rathmann 2013b, though he admits that they had little relevance for practical use, but see otherwise Brodersen 2012b who rejects the existence of maps in the Greek and Roman world. The role of the army in gathering geographical knowledge and its documentation is discussed by Mattern 1999, 26–41, who supports plans and maps; for itineraria see below.
9 Although some recent research still considers it possible that the “world map” was in fact a text, Brodersen 2003, 268–28 and Brodersen 2012b, 108–109, a graphical representation of the orbis terrarum appears more likely, see Häger 2007.
10 Brodersen 1996.
all of which provide information about the measures used to penetrate conquered territory, an aim the Romans largely pursued by building and marking roads. This contribution uses these sources to study the processes of surveying and assessing space in the Roman Empire.

2 Surveying

The legal right to possess land was always the foundation of spatial order, which was inevitably based on the survey of plots of land on a local level. Forms of real estate had to be distinguished to define property rights, rights of way, and other usage rights and charges, leading to the differentiation of real estate categories (ager publicus, ager privatus). On the local scale centuriatio and limitatio served to subdivide areas when new colonies were founded or plots distributed to veterans and settlers. The division of land in the Roman Empire thus begins with its expansion in the 4th century BC. Specialists (agrimensores, finitores, gromatici, mensores), usually military or state officials, were responsible for this task. The writings of the surveyors (Corpus Agrimensorum Romanorum), compiled in the 5th century AD, show their duties and methods, but also the problems they encountered, including legal disputes about land categorisations and boundaries.\(^{11}\) The results of their activities are still visible in archaeological remains of grid structures on the land, but also in epigraphic sources that document the geodetic assessment of the landscape by means of boundary stones and land registries (formae). The surveyors state that the land division should be codified on location on a forma, with a copy being sent to the archive in Rome.\(^ {12}\) So far, this practice is documented only by a few fragments of bronze and stone plans from Italy and the provinces\(^ {13}\) as well as by a bronze tablet from Ilici/Elche in Spain containing measurements and a list of

\(^{11}\) Dilke 1971; Von Cranach 1996; Campbell 2000; Lewis 2001; Willi 2014 summarises the process of land division and the sources.


\(^{13}\) See bronze plans from Verona AE 2000, 620 and Cavalieri-Manassé 2004 and from Spanish Lacimurga AE 1990, 529; for the marble fragments from Orange (Arausio) see Pigniol 1962. On the marble plan of Rome, the Forma urbis, Rosada 2007; on plans in general and the forma in particular see Dilke 1971, 82–177; Hänger 2001, 21–61, esp. 27–43.
names as a result of the allocation (*sortitio*).\textsuperscript{14} On the ground, the boundaries were marked by boundary stones (*terminatio*) with inscriptions that defined the border (*finis*), but only rarely provide measurements.\textsuperscript{15} Some of them bear the names of the responsible officials, e.g. the *tresviri agris iudicandis adsignandis* of the Gracchan land reform (*CIL I*\textsuperscript{2} 639–645; 2932–2935) or a provincial governor.\textsuperscript{16}

The epigraphic monuments of the imperial period often document the decision-making process behind a *terminatio* that drew boundaries between the territories of tribes and communities or private individuals, conducted by Roman state officials. The borders, or rather the size of the resulting area, determined the revenue generated from civic real estate and the tax revenue earned by state and local community. Location and size of private real estate were crucial for determining not only rights of way, but also taxes and duties, e.g. regarding the maintenance of roads and contributions to state-run logistics and transportation services. This frequently resulted in problems and disputes about area boundaries. Such disputes were often resolved by governors, imperial legates and other officials of the Roman state, but usually only once the communities or individuals involved had failed to find a solution and had appealed to the official representatives for help.\textsuperscript{17} This process is mainly documented by a number of inscriptions with the formula *ex auctoritate / iussu imperatoris*, showing that the actions of the magistrates in establishing boundaries between city territories were sanctioned by imperial mandate.\textsuperscript{18}

As permanent monuments in the public sphere, however, such delimitation inscriptions document only the results relevant to all parties, by identifying the

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\textsuperscript{14} *AE* 1999, 960 and Olesi-Vila and Mayer 2001.

\textsuperscript{15} The boundary stones were set up either at the corners or along an edge after the boundary had been established and documented in a deed to allow for later verification, see *ILS* 9382: *ter(minus) vetus positus secundum acta*. In Rome, the distance to the next marker is given by the boundary stones of the *pomerium* as well as those found along the bank of the Tiber or the protective strips along water conduits as in *CIL VI* 40852–40888; see in short Kolb 2003.


\textsuperscript{17} Eck 1990; Burton 2000; detailed discussion in Elliott 2004; Meyer-Zwiffelhoffer 2002, 103–116; Cuomo 2007, 103–130; Wesch-Klein 2008, 142–144.

\textsuperscript{18} These cases lead one to suppose that the communities appealed directly to the emperor, see Eck 1990; cf. however Burton 2000, 213, who also considers the possibility that the phrase is simply a reference to the *mandata* of the functionary. On the formula on milestones cf. Rathmann 2003, 78–80.
authority responsible for the *terminatio* and thereby guaranteeing the legitimacy of the verdict. The practicalities of the survey that necessarily preceded such a pronouncement are usually not recorded, since the measurements and the names of the responsible surveyors are only rarely given. Rare examples of the practicalities are provided, however, by a number of related documents from the alpine region, consisting of a delimitation inscription and four boundary stones, as well as through four boundary stones from Thracian Philippopolis. Such more detailed documents are the exception, however.

All known documents show that land survey in the Roman Empire took place on a small scale and was thus closely linked to a local mindset and frame of reference.

3 The Infrastructural Pervasion of Space

As regards the organisation and administration of the Empire, its spatial pervasion with roads and other infrastructure was of fundamental importance. This process becomes tangible mainly in the construction of the public roads (*viae publicae*) from the 4th century BC onwards, aimed at connecting the newly acquired territories to the centre of the Empire and thus contributing to their military security. The creation of the great state roads thus largely reflects the progress of Roman expansion, beginning in Italy and spreading both west and

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19 In some cases the performance of a survey is at least mentioned, as in *CIL* X 1018 = *ILS* 5942 (Pompeii).

20 *CIL* VIII 22786: *Leg(ion) III A[ug(ustae)] / leimitavit (sic) / C(ai)o Vibio Marso / proco(n) s(uli) III / d(extra) d(ecumani) LXX / u(ltra) k(ardinem) CCLXXX.

21 *CIL* III 586 = 12306 = *ILS* 5947a (Lamia, Macedonia); *CIL* VIII 25988, 2b = *ILS* 9387, *CIL* VIII 25988, 7b, 12b.


23 Nigelidis and Sverkos 2009, 166–167 also with other examples.

24 *SEG* XXIV 1108–1109 (Histria, Moesia inferior, 100 AD): These two bilingual inscriptions give the course of the boundary and the relevant measurements, but also document the governor defining borders as a result of an appeal regarding customs duties; similar processes are visible on the Republican bronze tablet (*sententia Minuciorum*) *CIL* V 7749 = *ILS* 5946 (Genova, Liguria).
east. On the Italian peninsula, Rome’s expansion into the south first resulted in the construction of the *Via Appia* (after 312 BC: Frontin., *Aq. 5*), the first systematically planned state road that provided a shorter and faster route south than the mountainous *Via Latina* or the coastal roads. Furthermore, Horace (*Sat. 1.5*) describes a drainage canal also used for towing which was built between Forum Appii and Feronia for the purpose of crossing the Pontine marshes. This project allowed this difficult area to be traversed easily all year round. The example shows that roads and canals were complementary parts of the same infrastructural system, a system that also drew on lakes and rivers (as in the Rhone-Saone region) besides the Mediterranean. This logistical infrastructure of the Empire developed piece by piece by incorporating and expanding existing connections, but also by establishing new routes, especially as part of the process of provincialisation after the conquest of new territory. Various sources also show some degree of structural planning, the basis of which was of course provided by land surveys and the construction and optimisation of communication routes.

Since these lines of communication were designed to be directly connective, this process of spatial pervasion followed a concept of linearity. With the aid of technically challenging structures (bridges, tunnels), obstacles were lessened or removed, as Plutarch (*C. Gracch. 7*) notes when discussing the road-building policy of Tiberius Gracchus. The logistics infrastructure was therefore based on a linear, road-oriented perception of space that ignored the results produced by scientific geography, i.e. the geometrical study of two-dimensional space. Its usual implementation is visible in three main classes of documents: 1) building inscriptions that visualise the pervasion of space by manifestly presenting routes, 2) milestones that are the characteristic feature of the *viae publicae* as markers of distance, 3) itineraries that describe one or more routes in literary or epigraphic form.

3.1 **Building Inscriptions as Media of Spatial Pervasion**

The oldest document of the first type is the famous Elogium from Polla (end of the 2nd cent. BC), the text of which presents the space made accessible by the newly constructed road from Capua to Rhegium. The inscription lists the most significant places along the road as well as the distances between them;

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26 Strab. 4.6.11; for the development of the infrastructure Kolb 2012.
28 *CIL X* 6950 (p. 1019) (Forum Popillii). On the identification of P. Popilius Laenas (cos. 132) as the builder see Camodeca 1997, 266.
it thereby provides a precursor for epigraphic records of building from imperial times that list precisely measured distances in their public visualisation of the infrastructural improvements made by the responsible official or emperor. Imperial monuments of this kind include the so-called Tabulae Dolabellae from Dalmatia that document the expansion of at least five roads in the new province under Emperor Tiberius as well as the Stadiasmos monument from Lycian Patara that manifests the gratitude of the provincials to Emperor Claudius for ending the civil wars and initiating the construction work on the roads.29 As the distances given in the inscriptions suggest, the construction of roads was probably usually preceded by a demarcation of plots of land or a land reform. On the local level this can be observed on nine stones from the area around Hierapytna (in South-Eastern Crete) where Claudius commissioned the construction of roads and paths.30 The double function of Paconius Agrippinus as quaestor and official for the determination of boundaries suggests that the first step was to create a land registry. The steles (all from the territory of this one polis) should thus be regarded not only as records of building, but also as boundary markers.31

The measures taken on Crete, put into place after the turmoil of the civil wars and the final establishment of the province by Augustus, seem to be comparable to the interest of Claudius and his governor Quintus Veranius in building roads and paths in the newly established province of Lycia, as is shown by the inscriptions on the Stadiasmos monument from Patara (45 AD). The monument combines honours for Claudius with a dossier documenting building activity and a road network: 65 routes of the province of Lycia are listed, complete with their lengths.32 Since the Lycians erected the monument, all distances are given in Greek stadia, suggesting that already existing records of established roads and plot boundaries were of primary importance. In part

29 Tabulae Dolabellae: CIL XVII 4 (fasc. 2) p. 130–133 (Dalmatia); Kolb 2013a, 216–218; Stadiasmos: SEG LI 1832 = SEG LVII 1670 = Şahin and Adak 2007; Kolb 2013a, 206–214.
30 IC III p. 64–66 no. 25–29; SEG II.1231 = AE 1999, 1742; SEG LVII 1051–1054. Quintus Paconius Agrippinus (PIR² P 27) is also known from a series of delimitations in Kyrenaica under Vespasian SEG I 1630; Nigelidis and Sverkos 2009.
31 Two further inscriptions from Hierapytna may indicate earlier delimitations by order of Augustus, and may even attest actual road building activity IC III p. 73 no. 62; IC III p. 74 no. 63; see Baldwin Bowsky 2006, 559–574.
32 As Şahin and Adak 2007 justifiably suppose, the stone is a base for an equestrian statue of Claudius; on the layout and structure of the list of routes Salway 2007, 195–203; Graßhoff and Mittenhuber 2009. A practical function of the list of routes as an itinerary for travellers, as is postulated by Salway 2001 and Salway 2007, 194–201, should be rejected: Kolb 2007, 179–180, Kolb 2013a, 206–214.
they will undoubtedly have been updated and adapted with the help of Roman surveyors.33 However, neither a comprehensive land survey, nor real road building activity will have been possible for the Romans in the short time span between the annexation and the construction of the monument (43–45 AD). It seems clear, for example, that at the time of the erection of the *Stadiasmos* monument only a short stretch of 32 stadia (four Roman miles) of road in the northwest of the province had been completed.34 Other Lycian evidence for the construction of roads and bridges does, however, indicate a large-scale and long-term initiative by Claudius—and his successors—aimed at establishing, expanding and optimising the traffic infrastructure of the new province. The land surveys were thus performed as part of the imperial interest in roads and paths.

Some other well-known inscriptions that present roads, places and distances can similarly be interpreted as building inscriptions that simultaneously visualise the appropriation and pervasion of space:36 The stone pillar found in the vicinity of Tongeren (*Atuatuca Tungrorum*, 3rd cent.) gives three routes that seem to have begun in Tongeren;37 fragments of three small 3rd century marble tablets from Autun (*Augustodunum*)38 attest three routes in Gaul; a stele from the province of *Arabia* (apparently from the year 273) provides information about the space made accessible by an emperor’s building activity along a road connecting Bostra and Dumata.39

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33 On earlier land surveys cf. Strab. 14.3.6–8. This argument is not contradicted by the large proportion of even distance numbers which indicate a conversion of Roman miles into stadia (8 stadia = 1 Roman mile), cf. differently Şahin and Adak 2007, 107, 120; Salway 2007, 201; Graßhoff and Mittenhuber 2009, 26, 159. See also Grewe 2013, 128–135.

34 Şahin and Adak 2007, 41 C 3–4 (STR 42).

35 SEG LII 1438 (Limyra, Lycia et Pamphylia, 45 AD); AE 1998, 1399 (Oinoanda, Lycia et Pamphylia, 50 AD).


37 *CIL* XVII 2, 675 = *CIL* XIII 9158 = *ILS* 5839: small fragment of octagonal column (height ca. 40–50 cm, letters 1.5–3.3 cm).

38 *CIL* XVII 2, 490 = *CIL* XIII 2681 = *ILS* 5838: originally a marble pillar or base (frag. b: 16 × 26 × 17 cm, letters 1.2 cm); on this type cf. *CIL* XVII 2, 676 = XIII 4085 (between Junglinster and Bourglinster, Luxembourg, Gallia Belgica): fragment of a stone tablet (27 × 36 cm, letters 2.5 cm).

39 Kennedy 2004², 60–61 no. 2 (Qasr al Azraq, Arabia): stone block (48 × 29 × 26 cm).
3.2 **Milestones**

The largest group of epigraphic monuments that attest to the survey and assessment of space via traffic infrastructure consists of milestones. Mile for mile they were set up along the public roads (*viae publicae*), but also along the canals which were also, like the roads, commissioned by Roman magistrates and emperors and intended to serve the logistical needs of the public. The stones helped travellers to orientate themselves since the milestones gave the distance to the actual or nominal beginning of the road (*caput viae*). Every milestone thus simultaneously provided a minimal itinerary: The distances given (Quint., *Inst.* 4.5.22) on a specific road allowed travellers to estimate how far they had come and how far they had yet to go.

The fact that various regions had extensive road networks resulting in great distances is reflected in inscriptions with high mile counts. It becomes clear then that it was always necessary to collect more detailed information from the available travelling handbooks and route descriptions, both as regards the course of the chosen route and the inns and roadhouses along the way. One must note, however, that such supra-regional connections were generally of relevance only to the emperor, his officials, and the army—at least if we disregard long-distance traders, business men and the handful of people taking a study tour of the Empire. Long routes consisted of chains of shorter stretches that had to be planned far ahead of time, complete with road stations and necessary turn-offs. This was especially true for larger undertakings.

The majority of travellers, however, covered only short distances within a single region, with the result that both public and private traffic infrastructure generally focused on short-distance connections. This is clearly visible in the list of routes recorded on the Lycian Stadiasmos monument. The network of roads evidently largely consisted of foot-paths and mule tracks, meaning that there were only few *viae publicae* and that most connections were of primarily regional importance and not suitable for wagons due to the mountainous and fissured terrain. On the other hand, the system behind the Lycian list of routes consists mainly in listing individual routes, based on their starting

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40 Hirschfeld 1907; in short Kolb 2004; Kolb 2011.
41 *AE* 1983, 927 (Kucuk Dalyan Koyu, Syria); *CIL* III 12046 = *ILS* 5797 (Alexandria, Aegyptus); *AE* 1905, 39 = *ILS* 9370 (Alexandria, Aegyptus); Kolb 2012, 64–65.
42 See e.g. from Raetia *CIL* XVII 4, 1, 8–9; Hispania citerior *AE* 1961, 133; *CIL* II 4918; Syria *CIL* III 208 (p. 973); on *capita viarum* in the Western Empire see Rathmann 2004.
43 *E.g.* SHA, Alex. Sev. 45. 2: travel plans of Severus Alexander; on imperial travels see below.
45 For a typology of Lycian roads see most recently Kolb 2008, 359–366.
points at settlements or junctions. If one needed a longer connection that passed through several settlements, however, one had to string together segments scattered throughout the text.

Milestones further document the integration of peregrine populations into the Roman system of law and administration, since the permanent stone monuments mark the *viae publicae* as a Roman institution. The structure is visible in the titles of magistrates and rulers, but also in the use of Roman miles to express distances. Polybius (3.39.8) reports the length of the route from Southern Spain (*Carthago Nova*) to Italy using stadia, but also notes that the Romans had then accurately measured only part of the route (between Narbo/Narbonne and the mouth of the Rhône), marking it every eight stadia (ca. 1 m.p.) just as Plutarch (*C. Gracch.* 7) later described it for the road building project of Gaius Gracchus. Pre-Roman markings were supplemented or replaced with milestones, once the existing paths were expanded or integrated into the Roman road network. A unique exception is found in the Gallic and Germanic provinces, namely stone markers that give distances in Celtic *leugae* (*i leuga* = 1.5 m.p.) instead of Roman miles. The oldest so far are of Trajanic date, but we have simultaneous and later milestones with measures in miles as well. It seems unlikely that this development was the result of a pursuit of local autarky or administrative restructuring. Instead, the customary Celtic measurement seems to have been overlaid by the Roman measurements for a time, possibly only where Roman road building had in fact taken place, since even the *Tabula Peutingeriana* still gives measurements for the area in *leugae*. Along other roads or stretches of roads, especially those that were well established, Celtic markers may have been retained unless we want to assume that Augustus had *leuga*-stones set up that were later replaced with milestones. This is suggested by the fact that various Gallic roads have provided no pre-Claudian milestones even though Roman infrastructural activity is known, e.g. during Agrippa’s governorship in Gallia Lugdunensis (Strab. 4.6.11). The people of the Empire thus used their accustomed measurements for documenting distances, i.e. stadia in the case of Lycia (which incidentally never appear on milestones), even though the monument obviously also meant that the local population venerated the emperor as their new ruler and presented their province as equal to the highly civilised *orbis Romanus*.

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46 On the systematics see Graßhoff and Mittenhuber 2009, 221–250.
47 For pre-Roman roads: Briant 2012; Kolb 2013b, 114 n. 40; Rathmann 2014a, 202–208.
48 For the discussion see in detail Rathmann 2003, 115–120, who interprets the *leuga* as an imperial innovation in Gaul without a pre-Roman tradition. The usual measure of *i leuga* as 2,220 m. is clarified by Grewe 2013, 131–134 in an example as 2,222 m.
49 Hirschfeld 1907, 721–723.
Roman respect for local traditions is the exception rather than the rule, mainly occurring when the populace was required to fulfil certain duties or when such demands were being newly implemented in a region. The governor of Galatia under Augustus, for example, used the customary Persian *schoinos* for measurements in defining the services required from the populace for state logistics.\(^{50}\)

As roads spread throughout the Empire, covering its provinces and landscapes, they intersected local fields and premises, dividing and fracturing them in the process. This affected property rights, but also resulted in obligations related to the construction and maintenance of built infrastructure and state-run transportation services (*vehiculatio / cursus publicus*). In this regard, the milestones that were set up as a result of the land surveys functioned not only as symbols of rule, but also as concrete border or zone markers for the exercise of Roman power, allowing them to replace boundary stones at the local level. This can be illustrated in detail by a fragmentary inscription from Phrygia documenting the dispute between two villages (in an imperial domain) about the responsibilities arising from transportation services along the roads in their area. These responsibilities were assigned based on the subdivision of the road by the milestones.\(^{51}\) In a similar manner, building inscriptions sometimes refer to milestones in defining either routes or the length and location of a newly constructed facility or of a repaired stretch of road by using milestones as the beginning- and end-points.\(^{52}\) In particularly remarkable locations, milestones and building inscriptions can also function as boundary markers and reference points. The stone from Rabland in the borderland between Italy and the province of *Raetia* (dated to 46 AD) celebrated the provision of Roman infrastructure from the Po in Italy to the Danube via the *Via Claudia Augusta*, spanning more than 350 Roman miles:... *viam Claudiam Augustam / quam Drusus pater Alpibus / bello patefactis derexserat (sic) / munit a flumine Pado at (sic) / flumen Danvuium per / m(ilia) p(assuum) CC[CL]*.\(^{53}\) Similar markers have been found at other legally or topographically significant locations such as city gates, municipal borders or crossroads, where they provide information about certain routes and their respective lengths. Even today, the city gate of *Leptis Magna* features the milestone of a road leading out into the metropolis' southern back country: *Imp(eratoris) Ti(beri) Cae/saris Aug(usti)...

\(^{50}\) SEG XXVI 1392 (Sagalassos).

\(^{51}\) SEG XVI 754 l. 4–6; with Pekáry 1968, 135–137; French 1991, 57; French 1993.

\(^{52}\) AE 1979, 257 (Torviscos, Venetia et Histria); CIL X 1064 = ILS 5382 (Pompei, Campania); CIL VIII 26534 = Aounallah 2010, 288 (Thugga, Africa proconsularis).

\(^{53}\) CIL V 8003 = CIL XVII 4, 1; cf. CIL V 8002 = ILS 208.
Starting from the coast, the interior of the country had been surveyed by the proconsul Aelius Lamia on Tiberius’ orders (ca. 15/16 AD), providing infrastructure and 44 miles of road. The name of the settlement at which the road ended seems to have been of little significance, as it is not listed; presumably it was a small outpost or hardly known settlement.

On some occasions, milestones list several connections within a single region, complete with the respective distances. The most important and unparalleled example is a North African milestone from the year 220, listing the distance to the five most important cities of the two provinces Africa and Numidia. In other cases, milestones accentuate the supra-regional connections of a region by including a more remote destination outside the province. Rome is of course most common. The same function was probably fulfilled by the miliarium aureum, set up on the Forum Romanum by Augustus in the year 20 BC, after he had taken over the cura viarum—that is, if one wishes to follow the dominant assumption that the monument listed the roads that began in Rome, together with their destinations and lengths.

3.3 Itineraries

Itineraries, literature intended for practical use by travellers, likewise attest to a road-based perception of space since they also provide lists of routes and distances. By contrast with their important function, however, the actual amount of surviving texts is very limited, even though one must assume that itineraries were widespread and commonly used both for private and administrative purposes. In official contexts they were relevant on all levels of state administration. Both the emperor and the army required itineraries to plan and prepare the logistics for imperial tours and campaigns. Even in the 4th century, the military writer Vegetius (3.6) still mentions them as a widely used strategic aid. Governors and other imperial officials likewise needed to possess detailed knowledge of the existing network of roads and its state

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54 The Inscriptions of Roman Tripolitania, Reynolds and Perkins 1952, 930.
55 CIL VIII 10118 = 22247= ILAlg 1 3892 (Fedji–Souioud / Beida, Ain el, Numidia).
56 E.g. AE 2000, 119 (Savaria, Pannonia); CIL XVII 2, 291 (Roquefort-des-Corbieres, Gallia Narbonensis); CIL XVII 2, 298 (Saint-Couat-d’Aude, Gallia Narbonensis); Kolb 2007, 172–173.
57 Brodersen 2003, 254–255.
59 Halfmann 1986, 65–110; SHA, Alex. Sev. 45. 2; IGLS IV 1346.
60 E.g. curatores viarum, praefecti vehiculorum see Eck 1979, 37–110; Kolb 2000, 152–165.
of repair since they were responsible for the extension and maintenance of both the traffic infrastructure and the state-run transportation service. The local authorities of cities and villages also possessed road registries for administrative purposes since they were responsible for the upkeep of various kinds of roads both inside the city and in its territory. In the private sector, the example of a certain Martina, who travelled via more than 50 mansiones from northern Gaul to Acelum/Asolo (near Treviso), the site of her husband’s death, suggests that she knew of and used an itinerary of some sort.

Ancient itineraries survive in literary and epigraphic form and were often drawn up based on the traveller’s needs. This procedure led to the creation of a first category of itineraries, consisting of individual lists of routes. This category also includes the oldest known example, the Augustan “Parthian stations” by Isidore of Charax. It sketches the way from Antioch on the Orontes along the Persian Royal Road to Alexandroupolis in Arachosia, giving the relevant way stations and distances. Other important examples include the Itinerarium Burdigalense that outlines the path taken by a Christian travelling from Bordeaux to Jerusalem in the year 333, or the notes taken by the jurist Theophanes on occasion of his official travels in the years 322/23 (?), which, although intended primarily for accounting purposes, include a list of way stations and distances between Hermopolis in Middle Egypt and Antioch in Syria. Another individual itinerary is the Itinerarium Alexandri from the year 340, which describes the path taken to Persia by Alexander’s army. Late-antique travel journals such as the one kept by Egeria, who travelled the Holy Land between 381 and 384, also provide further information that goes beyond a mere itinerary.

A second category, namely lists that comprise numerous roads and routes, is attested for the 3rd century by the Itinerarium Antonini. Encompassing more than 225 routes and 2000 place names and distance figures from all over the

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61 E.g. Dig. 50.4.12; 50.5.11; Pekáry 1968, esp. 113–138; Kolb 2000, 123–151; Rathmann 2003, 136–142.
63 CIL V 2108 (p. 1069) = ILS 8453 (Acelum, Venetia et Histria).
64 Schuol 2000, 114–117, 341, 388. This itinerary, however, could be part of a geographical report of or monograph on Parthia; Mattern 1999, 34–35.
66 Matthews 2006.
Roman Empire, the work was probably a travel handbook that was used as a reference book for making individual plans.\textsuperscript{69} Such literature had a long tradition, as is shown by a 1st century AD funerary inscription from Smyrna listing the works written by the deceased, a doctor named Hermogenes: besides numerous literary works, he had also produced two books of distance figures in stadia—one for Asia and one for Europe.\textsuperscript{70}

Finally, a rather more exceptional category seems to be mentioned by Vegetius (3.6) in his note on the various forms of itineraries: itineraria. . . non tantum adnotata sed etiam picta. Besides simple lists, both with and without comments, there must thus have been itineraries that were rendered in graphical form or included images (itineraria picta). It is conceivable that the famous Tabula Peutingeriana, a medieval copy of a depiction of routes made in the 4th century, is the most famous example of this practice.\textsuperscript{71}

Epigraphically preserved itineraries fall into two categories: on the one hand, they also provide documentation of individual journeys or single roads and routes, visible for example in an inscription fragment from a grave complex of Tiberian to Claudian date which provides a day by day break-down of a journey from Cilicia to Cappadocia,\textsuperscript{72} or a fragment from Valentia which lists place names between Carthago Nova/Cartagena and the Pyrenees.\textsuperscript{73} On the other hand, “souvenirs” in the shape of cups or bowls attest travels to tourist destinations: the journey from Gades in Spain to Rome is documented by four silver cups from Aquae Apollinares Novae/Vicarello (50–150 AD),\textsuperscript{74} while locations on Hadrian’s Wall are documented by bronze vessels from Amiens and Rudge.\textsuperscript{75}

4 Concluding Remarks

One must assume that besides milestones, building inscriptions, land registries, and official and private documents other helpers also existed—especially in the public sphere—to document the surveying and cultural pervasion of


\textsuperscript{70} IK 23. 536 (with IK 24 (2) p. 374, Smyrna, Asia).

\textsuperscript{71} Recently for the TP see Talbert 2010a; now also Rathmann, in this volume.

\textsuperscript{72} CIL VI 5076 (p. 3416), Hadrianic (?) with Halfmann 1986, 86. Not included is AE 1921, 6–9 clay tablets from Astorga, authenticity disputed; see further Kolb 2013a, 200 n. 26.

\textsuperscript{73} CIL 11/14, 38 = 11 6239 (Valentia, Hispania citerior).

\textsuperscript{74} CIL XI 3281–3284; on dating etc. Kolb 2013a, 202 n. 29.

\textsuperscript{75} AE 1950, 56; CIL VII 1291.
space. This is particularly pertinent for the orientation of travellers on public roads, who will certainly have been able to draw on other forms of assistance besides travel handbooks and milestones, i.e. wooden road signs. The fact that there is only one example of a milestone with a list of five routes (from North Africa) makes this clear beyond doubt. Since this object is unique among the almost 2000 milestones that survive from the same area and around 8000 from the whole Empire, it must induce one to postulate the existence of similar objects but made from perishable material. That public roads were generally fitted with less durable destination boards seems to be indicated already by the tabellaria mentioned in the Elogium of Polla as having been put up by the builder along his road.\footnote{76}

Based on the evidence discussed it becomes clear that the Roman conception of space was genuinely represented through their measurement and survey of the world from a linear perspective.\footnote{77}

\footnote{76} CIL X 6950 (Forum Popillii, Regio 111): \ldots viae fecei ab Regio ad Capuam et in ea via ponteis omnes miliarios / tabelariosque poseivei hince sunt\ldots ; on this see already Cary 1936; Kolb 2000, 26–27; differently Salway 2001.

\footnote{77} Lately Talbert 2010b, 264–269 adds portable sundials to the sources for recovering the Roman worldview.
Strabo was born to a prominent family in Amaseia (modern Amasya, Turkey) the capital of the Hellenistic kingdom of Pontus. His forbears held important public offices under Mithridates V Euergetes (150–120 BC) and later under Mithridates VI Eupator, and were directly involved in the affairs of the realm until its end. A few of them remained loyal to the monarchy. Others, as did Strabo’s grandfather, crossed over to the other side when the Romans took power, thanks to the military campaigns first of Lucullus and then of Pompey (66–63 BC). The geographer’s birth most likely dates to this period (perhaps in 64/3 BC) and his death probably came after that of Juba II of Mauretania (23 AD) to whom Strabo himself refers many times (17.3.7; 9; 25). The little biographical information we have about Strabo all comes from his geographical treatise. He made repeated sojourns in Rome. In 25/24 BC he joined the expedition led by Aelius Gallus, prefect of Egypt, to Arabia Felix, after having accompanied him on the ascent of the Nile until Syene (Aswan), on the border with Ethiopia (2.5.12). Strabo’s sojourn in Alexandria certainly dates to this period, but by 7 BC he is back in Rome.

By the second half of the 2nd century BC, Rome had become a cosmopolitan city, where an especially warm welcome was accorded to those Greeks who were ready to take advantage of their technical, artistic and intellectual talents by putting them at the service of the new rulers of the world. The personal relationships, which, from the Mithridatic Wars to the closing years of the Roman Republic, developed between Roman political leaders and the local aristocracies of the East, are generally rather well known, and it is certainly no coincidence that a lot of information about those relationships is occasionally provided by Strabo. The choice of sides that divided his family between Mithridates VI Eupator and the Romans, was also imposed on other leading intellectuals (rhetoricians and philosophers), who were politically active in the Hellenistic cities of Asia. Later on, during the tormented decades of the civil wars, the necessity or opportunity of choosing sides between the two parties to the conflict—Pompey or Caesar, Octavian or Antony—would present itself again. Even when the choice proved to be mistaken, the defeated sometimes found the victor to be their new patron. As part of his following,
they came to Rome, where they were able to continue performing their pedagogical and cultural services for the most prominent families of the aristocracy. After Actium (31 BC) and the end of the civil wars, the more favorable political climate allowed this process of cultural integration at the higher levels of Roman society to be fully completed.

Strabo’s teachers included Aristodemus of Nysa (14.1.48), tutor to the children of Pompey the Great, and the philosopher Xenarchus of Seleucia in Cilicia (14.5.4). After sojourning in Athens and Alexandria, Xenarchus arrived in Rome, where he carried on with his pedagogical activities and, thanks to Aurius Didymus, one of Augustus’ teachers, he became part of the emperor’s circle of which he remained a respected and honored member for the rest of his life. Strabo also attended the lessons of a celebrated “grammarians,” his fellow countryman, Tyrrannion of Amisus (12.3.16). Brought to Rome as a prisoner during the second Mithridatic War, Tyrrannion enjoyed the friendship of Caesar, Atticus, and Cicero. He taught Cicero’s children and reorganized the library of Theophrastus, transported to Rome in 84 BC, after the sack of Athens by Sulla. Strabo also recalls as his friend (16.4.21) the stoic philosopher Athenodorus of Tarsus, student of Posidonius and tutor of Augustus (14.5.14). Apart from his friendship with Aelius Gallus, prefect of Egypt—to which can be added his acquaintance with Gnaeus Piso, proconsul of Africa (2.5.33)—Strabo tells us nothing more about his Roman patrons. He does seem, however, to have been well introduced into the thick network of relationships between important political leaders of the late Republic and exponents of Eastern Greek culture, a network which became more tightly woven following the Mithridatic Wars.1

1 The Structure: Map and Text

Before beginning work on his Geography, Strabo (1.1.23) wrote a 43- or 47-book history (Ἱστορικά ὑπομνήματα),2 as a sequel to Polybius, whose narration stops at 146/5 BC, with the destruction of Carthage and Corinth. Only some twenty fragments remain (FGrHist 91), whose contents do not help us much in understanding if and in what measure, by revisiting the events already narrated by Posidonius as a continuation of the Histories by Polybius, he wished to distance himself from his predecessor. The fact that Strabo was writing after the civil wars could in any case have offered him a more secure perspective on the last

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2 Ambaglio 1990; Engels 1999, 76–89.
Strabo’s Geography

decades of the Republic and the basis of Rome’s hegemony over the world. As appears to be clear from some more programmatic passages, to which we will dedicate more attention below, Strabo assigns importance and special value above all to his monumental work of geography (in 17 books), the earliest of its kind that has come down to us virtually intact from antiquity.3

Preceded by a long, two-book introduction, the description begins with book 3 and, overall, its architecture follows the sequence of the continents as dictated by the canonical itinerary of the Mediterranean periplus, which begins from the Iberian side of the Pillars of Heracles and ends on the African side (Europe: 3–10; Asia: 11–16; Libya: 17).4 In the two books of the proem, between the initial programmatic considerations (1.1.1–23) and their later continuation (2.5.1ff.) there is an ample section dedicated to a critique of his predecessors (Eratosthenes, Polybius, Hipparchus, and Posidonius). After treating the dimensions of the inhabited earth and its cartographical delineation (2.5.6–17), the final part of book 2 concludes with a summary illustration of the ecumene (2.5.18–33) and a critical examination of the astronomical data (κλίματα) indispensable to its representation on the terrestrial sphere (2.5.34–43). The books that follow present, as far as possible in the order of their contiguity, the large geographical areas and the various “regions” of the ancient world.

3: Iberia; 4: Celtica and Britain; 5–6: Italy and the Tyrrenian Islands (Elba, Corsica, Sardinia, and Sicily); 7 (fragmentary at the end): northern and central Europe, which extends from the oceanic coast, between the Rhine and the Elbe, to the eastern Alps, to the Balkan regions north of the Greece (Illyria, Epeirus, Macedonia, Thrace) to the Pontic coast of Europe which terminates at the River Tanais (Don); 8–10: Greece and the islands (8: Peloponnesus; 9: Attica, Boeotia, and Thessaly; 10: Euboea, Aetolia, and Acarnania, Crete, the Cyclades and Sporades Islands); 11: the Asian shores of Pontus from the Tanais to Colchis, the regions and peoples of the Caucasus, of the Caspian Sea, of Cis-Tauran Asia (Hyrcania, Parthia, Aria, Drangiana, Bactriana, Sogdiana), then the mountain countries of the Taurus (Media and Armenia); 12–14: Asia


Minor, whose description begins with Cappadocia, which is contiguous with Armenia; 15: India with Taprobane (Ceylon), Ariana, Persia and Susiana; 16: Mesopotamia, Assyria, Syria, Arabia; 17: Egypt, Ethiopia, and Libya (the description of Libya begins, however, from the Pillars of Heracles—as in Pomponius Mela and Pliny the Elder—and proceeds west along the coast until the border with Egypt).

This structure shows the complexity of its internal articulation, down to the details, as it gradually moves closer to our point of observation. Naturally, a work of this size runs the risk of imbalance and inexactness. The geographer himself is aware of this, when, in comparing it to a colossal statue, he invites his readers not to concentrate on the details but on the project as a whole (1.1.23). Although marred by some significant imbalance even within the same book, the description is conducted according to well-reasoned and easily recognized criteria. Themes and perspectives for which Strabo does not hide his predilection or which date back to the cited sources, confer a unified approach on ample sections of his Geography. But the possibility of an overall view, for the author as well as for his audience, derives in the last analysis from the articulate and orderly presentation of the ecumene (2.5.11). The geometric grid, underlying Strabo’s map, coincides substantially with that traced by Eratosthenes, constructed by way of an orthogonal projection of the sphere onto the flat surface (fig. 1).

Strabo, who had learned the lesson of the Hellenistic scientists, not only emphasizes the need for geographic knowledge to be based on astronomy; he also guides the reader in the design of his map, making expert use of the scientific lexicon of his predecessors (2.5.1–17). In his instructive explanations, certain expressions echo the characteristic tone of the propositions of Euclid (2.5.5: ὑποκείσθω...let us take as a hypothesis...νοείσθω...let us conceive...; 2.5.6: προκείσθω...let us presuppose...). A longitudinal axis crosses the Pillars of Heracles and the Strait of Messina, touches the southern tips of the Peloponnesus, passes through Rhodes and the Gulf of Issus, and crosses all of Asia along the immense Taurus mountain range, marking the maximum extension of inhabited land from east to west. Perpendicular to this parallel of reference (36°N)—which retraces the line of Dicaearchus (F 110 Wehrli)—a second axis intersects it at Rhodes. On either side of these two coordinates, some parallel lines, drawn at irregular intervals in accordance with the very

6 Looking northward, Strabo’s ecumene stops, however, at parallel 54°N in Ierne (Ireland), and not at the parallel in Thule (66°N): Aujac 2000, 111.
few available astronomical surveys (and those only of latitude), and with estimates of the approximate distances of the itineraries, concur in forming the grid, which orders the location and individuation of the geographical spaces, with their characteristic and distinguishing features (cities, rivers, mountains, promontories).

Greek astronomy had made a great deal of progress in the four centuries preceding the epoch of Strabo. Nevertheless, it must not be forgotten that the very few latitudinal surveys which were effected, though they provided a mathematical basis for geodesy and for the collocation of the ancient world in the earth’s northern hemisphere, were clearly totally insufficient to ensure a scientific basis for the mapping of the earth. Even in the Hellenistic age geographers were indeed forced to recur to approximate estimates of terrestrial and maritime itineraries, and to the relative locations of peoples and countries, to then translate them into diagrams by way of a process of abstraction, which was both bold and fatally at risk of error. This tension between the multiple and often discordant data relative to the empirical knowledge of places, on the one hand, and the unceasing endeavor to adapt those data to a geometric scheme, coherent with the grid suggested by the very few available astronomical surveys, on the other hand, cuts across all of ancient geography. Traces of it are also evident in Strabo’s map. The shape of the ecumene does not coincide with the parallelogram in which it is inscribed—as in the map of Pomponius Mela—but rather it recalls the image of a chlamys, the characteristic Macedonian cape (2.5.6, 14 and 18). Indeed, the breadth of the inhabited earth diminishes sensibly at its eastern and western extremes (11.11.7), while at the northern margin to the east of the Albis (the Elbe), and at the southern margin beyond Ethiopia, its outlines dissolve because of ignorance or because of the inaccessibility of the places. The physiognomy and the articulation of the whole is the result, first and foremost, of the shaping action of the Ocean (2.5.7), which opens up four large gulfs, the Caspian (believed to be a large inlet of the External Sea), the Persian Gulf, the Red Sea, and the Mediterranean, in which the European coast is much more irregular and various compared to African and Asian coasts (2.5.18). Strabo traces the extent of the Internal Sea, its gulfs and straits (2.5.19–25), leaving in the background the continents, which are illustrated later (2.5.26–33), with their physical features and according to their geographical repartitions (κατὰ μέρος). This preliminary and synthetic illustration already announces some of the criteria underlying the individual chorographies.

7 Prontera 2001c, 212–213.
Strabo makes ample use of the periplus tradition, but he subordinates it to the unitary treatment of the regional areas, even when, as in the cases of Iberia and Celtica, their coast lines are divided between the ocean side and the Mediterranean side. His commitment to searching for the organizing principles of his description in the natural configuration and articulation of geographical spaces is characteristic (ἡ φύσις τῶν τόπων: 8.1.3; 12.3.42). It is partially because of this commitment that islands are usually associated with the contiguous continental portion, while in the Aegean archipelago it is Crete that exercises centripetal force in the description (10.4). Strabo observes (2.5.10) that adequate representation of the ecumene requires a sphere with a diameter of at least 10 feet or a square (πίναξ) with sides of at least 7 feet (m. 2 × 1). No such original document has come down to us from ancient cartography, but these measurements are suggestive of large wall maps, like those that were hung on the walls of the Lyceum at the time of Theophrastus (Diog. Laer. 5.61).

With regard to natural borders, rivers and mountains concur in marking, together with coastal morphology, the geographical divisions of the ecumene, which, unlike political-administrative borders, remain stable.8

4.1.1: “Next, in order, comes Transalpine Celtica. I have already indicated roughly both the shape and the size of this country; but now I must speak of it in detail. Some, as we know, have divided it into three parts, calling its inhabitants Aquitani, Belgae, and Celtae. (…….). Augustus Caesar, however, divided Transalpine Celtica into four parts. (…….). Now although the geographer should tell of all the physical and ethnic distinctions which have been made, whenever they are worth recording, yet, as for the diversified political divisions which are made by the rulers (for they suit their government to the particular times), it is sufficient if one state them merely in a summary way” (transl. Jones 1923).

Flowing from west to east, the Istros (Danube) cuts Eastern Europe in two (2.5.30): “it leaves on its left the whole of Germany (which begins at the Rhine), all the country of the Getans, and the country of the Tyregetans, Bastarnians, and Sarmatians as far as the River Tanais and Lake Maeotis; and it leaves on its right the whole of Thrace, Illyria, and, lastly and finally, Greece” (transl. Jones 1917). In the same way the Taurus range divides Asia into two parts, “the near side” and “the far side” (ἐντός/ἐκτός) of the mountain range, extending without

8 3.4.19 and 12.3.1 (on the administrative divisions of the Roman dominion); cf. 2.1.30 (important methodological considerations on the geographer’s divisions). Pothecary 2005b, 167, 177–179.
interruption from the capes of Pamphylia to the shores of the Eastern Ocean, where it terminates in a point (11.11.7). In harmony with these great divisions, the description of central Europe is articulated into trans and cis-Danubian regions and peoples (7.1.1; 5.1),9 the description of Asia into trans- and cis-Tauran (11.1.2–4). In the representation of Africa, likened to a trapezoid or to a triangle rectangle (2.5.33; 17.3.1), and of India, pictured as a rhomboid (2.1.22 and 31), we are reminded once again of the map by Eratosthenes. The tendency to translate natural features into geometric figures is expressed repeatedly and punctually in the single chorographies. This is a typical characteristic of Hellenistic geography, which, however, was lost in the Latin geography of the first imperial age (Pomponius Mela and Pliny), which was prepared to receive only the figurative aspects of Hellenistic cartography. Even when the profiles of some portions of the ecumene do not lend themselves easily to translation into geometric figures,10 it is striking the care with which Strabo forces himself to characterize their physiognomy first and foremost by way of a clear delineation. In this way, he introduces the periegesis of Iberia (2.1.3), of transalpine Celtica (4.1.1), of Italy (5.1.2–3), Greece (8.1.3) and the whole of Asia (11.1.1–7) (fig. 2).

Before Ptolemy’s Guide to Geography (Γεωγραφικὴ υφήγησις) it is Strabo who documents the progress of Hellenistic cartography along the path pioneered by Eratosthenes, and it is precisely in Strabo’s own work that the order of the periegesis and the verbal representation of regional and sub-regional features reflect their cartographic delineation. The correspondence between map and text must be presupposed above all when Strabo describes complex oro-hydrographic systems, whose articulation in turn serves to circumscribe ethno-regional units of various dimensions.11 Two such examples are particularly significant. In the section comprised between the Cilician Gates and the Caspian Gates, the Taurus range is enriched with new diagrammatic elements. Compared to what is described as its main body, some ramifications (ἀποσχίδες) and fragments (ἀποσπάσματα) are detached. The mountain is cut

10 Biffi 2012.
11 The optimism with which in the 19th century the attempt was made to reconstruct ancient cartography must certainly be abandoned and it would be well to be skeptical of such reconstructions, above all when the profiles of the geographical spaces do not correspond to geometrical figures. But greater awareness of the limitations of our documentation must not lead to the nearly total negation of the production and circulation of geographical charts within the narrow circles of cultivated people and scientists, as demonstrated by some parts of Strabo’s Geography, and particularly by some passages of the Prolegomena.
into by the course of rivers, which mark the beginning or the terminus of its partitions. Such a detailed image of the range and the various peoples that settled there cannot date back to the map by Eratosthenes. Eratosthenes could not have known of the southern ramifications of the Caucasus (Strab. 11.2.15) or the northern ramifications of the Armenian Taurus, which were discovered only when Armenia entered onto the scene of Hellenistic history and historiography, which is to say, with the end of the reign of Antiochus III of Syria (Strab. 11.14.5 and 15).12

The same observation applies, even more so, to the interior regions of Western Europe, whose physiognomy begins and emerges in the classical literature only after the Hannibalic War. Also in this case, the general design of the proem in books 1–2 is later matched by the descriptions of the regional profiles according to the order (τάξις) dictated by the “nature of the places,” which is to say, in accordance with the order corresponding to their cartographic representation.13 The determining factor for the geometric representation is the tendency to represent the European Mediterranean and Atlantic coasts with a clearly parallel east-west development. The erroneous orientation of the Pyrenees leads to a consequent distortion of other diagrammatic elements, which are represented as parallels (the Iberus/Ebro, the Mount Idubeda, the Sucro River/Jucar, the Rhône/Rhine and the remaining three rivers of Atlantic Celtica) or perpendiculares to the Pyrenees (the rivers of Lusitania and the Mount Cemmenus/Cevennes: fig. 3). The Narbonitis rectangle (south of the Cevennes range) is bordered on the north by Aquitania, itself formed by two rectangles, whose long sides are marked by the Pyrenees, by Garumna, and by Liger/Loire.14 The mouth of the Rhine is opposite the southeast point of the British triangle, while its sources are placed on the slope of Mount Adula (Saint-Gothard?) opposite the slope from which the River Adda (erroneously) descends.

Naturally, on this regional or interregional scale there is no mention of the geographical coordinates, whose tracing is discussed in the cartographic section of the proem. The geometric scheme which guides the description, however, cannot be explained as a casual elaboration of a “mental map” for the use of the reader. The interactions among the various parts of the drawing present a degree of systemization that presupposes the ordering intervention of a geographer/cartographer. François Lasserre indicated the name of Posidonius

13 Strab. 2.5.27–28; 4.1.1; 12.3.42. On the map-text correspondence in Strabo’s description of Iberia see Counillon 2007.
14 Prontera 2011a, 227–229.
to explain the updating and enrichment of the oro-hydrographic frames of Western Europe (Iberia and Celtica) and Asia compared to the summary delineation of Eratosthenes. In modern studies, the figure and the scientific work of Posidonius are more often associated with discussion of the mathematical-astronomical principles of geography than their cartographic application. We know, however, from Strabo, that he modified the position assigned by Eratosthenes to the triangle of Sicily in the delineation of the Mediterranean. Because of his intellect and the versatility of his talent, Posidonius probably played a more than marginal role in the development of pre-Ptolemaic cartography, and not only with regard to theoretical questions.

2 The “Regional” Descriptions

In Strabo’s time, the geography that describes the peoples and countries of the inhabited earth already has a long tradition behind it, which over time has enriched its contents and defined its themes. After the two books of the Periegesis by Hecataeus there came the seven books of the Γῆς περίοδος (Journey around the World) by Eudoxus (4th cent. BC) and then the 11 books of the geographical work (Γεωγραφούμενα) by Artemidorus of Ephesus (c. 100 BC). Together with this tradition, Strabo’s 17 books were influenced by Hellenistic scientific geography and historiography. The increment in the number of books derives in large part from the new information made available by political-military history. The insertion of the new information was facilitated by the structure of the descriptive geography of the ecumene, which reflects the “regional” divisions of the cartography. Like others before him, Strabo too boasts of his extensive voyages from Armenia to Etruria and from Pontus Euxinus all the way to the Ethiopian frontier (2.5.11), but in composing and illustrating the mosaic of the ecumene he must reutilize in large part the tesserae and materials provided by the tradition. The uneven quality of the work undoubtedly stems from the sources used. Nevertheless, the author’s imprint is most visible in the earnestness with which he confronts the methodological issues, in certain oscillations or uncertainties with which these questions are formulated and resolved, in his critical and even hypercritical attitude toward his more highly intellectual predecessors, and in his declared and defended predilection for certain themes (the signs and memories of Greek civilization, the defense

15 Lasserre 1966b, 6, 106, 124 n.2; Lasserre 1975, 21ff. (cf. 39 n.3); Lasserre 1981, 60.
16 Str. 6.2.1= F 249 EK; Prontera 2011a, 239–253.
of Homer’s geographic knowledge). The programmatic announcements of the Prolegomena are all to be found scattered throughout the descriptive books, where, however, the praxis does not always correspond to the theoretical preambles.

The single chorographies, after a preliminary delineation of the geographical space, pass in review, in the order of their contiguity, the inhabited centers and sanctuaries, the peoples and the physical and anthropological features of the landscape.\textsuperscript{17} The descriptive itinerary adopts the traditional criterion, which distinguishes the range of coastal sites from those located in the interior, for whose location, however, Strabo refers not only to rivers but also to the Roman roads (\textit{Via Egnatia}: 7.7.4 and 8; in Iberia: 3.4.9; in Italy: 5.2.9; 6.3.7 etc.). In his geography there are abundant indications concerning the distances between the places described, especially with regard to those facing on the Internal Sea. If one considers the various segments of the Mediterranean periplus inserted in the chorographies, one is immediately struck by the remarkable increase in information rooted in the nautical experience of the Hellenistic age.\textsuperscript{18} In the updating of data on the itineraries, both terrestrial and maritime, Strabo’s debt to Artemidorus is certainly greater than what is declared. Within single chorographies (Iberia, Gallia, Italy, etc.), Strabo interrupts the descriptive itinerary to highlight the peculiarities of the region, with observations on the productivity of the soil and economic activities, on the customs and uses of the inhabitants, and the historical and mythic memories of the peoples and their cities, with a multiplicity of details and a variety of interests which constitute the singular richness of the work. Strabo’s is a human geography, whose historical depth is determined first and foremost by the literary tradition itself, to which must be added the interests of an author who also presupposes their presence among his audience. While it is possible to characterize by their main themes the geographies of Pomponius Mela and Pliny the Elder, the same operation turns out to be much more difficult with Strabo. In an overall view, his work loses to a much greater degree a quantity of details, which reveal themselves to be no less significant than the overall architecture of the work.\textsuperscript{19}

\textsuperscript{17} The color maps which illustrate the edition edited by Müller, C., and F. Dübner 1858 provide an initial idea of the quantity of information contained in Strabo’s Geography.

\textsuperscript{18} The book by Arnaud 2005 is very important. Timosthenes of Rhodes, admiral to Ptolemy 11, wrote ten books \textit{On ports}; Prontera 2013.

\textsuperscript{19} Dueck 2000, 165–186.
“Thematizing” Strabo’s Geography20 (economics, political institutions, religion and myths, natural phenomena and physical geography, the literati, the philosophers and the scientists who lend luster to their cities)21 is an exercise which may certainly be useful, provided that equal attention is given to the historical and geographical contexts in which the various themes have their reason for being. To give an example, Strabo undoubtedly shows a certain interest for urban geography, to use a modern expression, but at bottom it is just one of the aspects that together design the historic-political identity of a city. The descriptions of Rome (5.3.7–8) and Alexandria (17.1.6–9), where he sojourned for long periods, are joined by those of Marseilles (4.1.4–5), Rhodes (14.2.5–9), Ephesus (14.1.20–25), and his own Amaseia (12.3.39). His long excursus on the history of the Attalids (13.4.1–2)22 has very few comparisons in the rest of the work, but it concerns the dynasty that welcomed Rome’s dominion in Asia.

The difference in perspective regarding the regions with older civilizations compared to those regions which have only recently become part of the Roman empire or which are located on its frontiers, is accentuated when Strabo describes the areas of Greece or Greek culture. Indeed, in local traditions and memory, history and myth are so intimately tied to the territory as to become almost the characterizing elements of the landscape. That which to our eyes might appear to be a strange blend of geography and antiquarian interests, was in reality quite normal with regard to Greece, as demonstrated by the criticism directed by Polybius to Eudoxus and Ephorus (10.3.5).

And Polybius (...) says concerning the Greek histories that Eudoxus indeed gave a good account, but Ephorus gave the best account of the founding of cities, kinships, migrations, and original founders, “but I” he says, “shall show the facts as they now are (τὰ νῦν ὄντα δηλώσομεν), as regard both the position of places and the distances between them; for this is the most appropriate function of Chorography” (transl. Jones 1928).

In another context, Polybius’ approach is specifically invoked by Strabo, who aims, however, to rectify it. Certainly a geographer must illustrate the current conditions of the countries and their peoples, but he must also say

20 Aujac 2000, 113–134; Dueck 2000, 79–83 (on the literati and the works of art that characterize the images of the cities).
22 Virgilio 1984.
something about their past, especially when celebrated events are involved\(^23\) (6.1.2; cf. 1.1.19).

6.1.2: “However, the man who busies himself with the description of the earth (τὴν τῆς γῆς περίοδον) must needs speak, not only of the facts of the present (τὰ νῦν ὄντα), but also sometimes of the facts of the past, especially when they are notable” (transl. Jones 1924).

In a long passage from the *Prolegomena* (2.5.17) this idea is given an articulated and mediated formulation, in which it is not difficult to recognize concepts taken from philosophical anthropology and ethics.

“It is the sea more than anything else that defines the contours of the land and gives it its shape, by forming gulfs, deep seas, straits, and likewise isthmuses, peninsulas, and promontories; but both the rivers and the mountains assist the seas herein. It is through such natural features that we gain a clear conception of continents, nations, favourable positions of cities, and all the other diversified details with which our geographical map is filled. And among these details are the multitude of islands scattered both in the open seas and along the whole seaboard. And since different places exhibit different good and bad attributes, as also the advantages and inconveniences that result therefrom, some due to nature and others resulting from human design, the geographer should mention those that are due to nature; for they are permanent, whereas the adventitious attributes undergo changes. And also of the latter attributes he should indicate such as can persist for a long time, or else such as cannot persist for long and yet somehow possess a certain distinction and fame, which, by enduring to later times, make a work of man, even when it no longer exists, a kind of a natural attributes of a place (συμφυῆ τοῖς τόποις); hence it is clear that these letter attributes must also be mentioned. Indeed, it is possible to say concerning many cities what Demosthenes said of Olynthus and the cities round about it, which have so completely disappeared, he says, that a visitor could not know even whether they had even been founded. But nevertheless men like to visit these places as well as others, because they are eager to see a least the traces of deeds so widely famed, just as they like to visit the tombs of illustrious men. So, also, I have mentioned customs and constitutions that no longer exist, for the reason that utility urges me in their case just

as it does in the case of deeds of action; that is, either to incite emulation or else avoidance of this or that” (transl. Jones 1917).

Strabo’s interest in the past of the Greek world (book 6 in part; 8–10), and in its still-conserved traces, reaches the point of inserting in the chorography of the Hellas and of the Hellenized regions of Asia Minor (in particular, Troas, book 13) ample sections dedicated exclusively to the topographical exegesis of the epos.24 Drawing on the commentaries of Hellenistic scholars, such as Demetrius of Scæpis and Apollodorus of Athens (2nd cent. BC) he dilates his description with interminable and subtle discussions of the identification of the sites and peoples mentioned by Homer. If one considers the exemplary place and value that Homer always had in the upbringing and education of the Greeks, one realizes that, in order to understand correctly his poetry, it was also necessary to provide oneself with adequate astronomical, geographical, and topographical knowledge. Through Homer, geography entered very early on into the field of study of philologists in Alexandria and Pergamon, and thus into the teachings of those grammarians of the Hellenistic East, such as Tyrannion, who came to Rome to instruct the young of the aristocracy. At the same time, the specialization of learning and the broadening of geographical knowledge gave rise to a vibrant debate among the scientists and scholars of the first Hellenistic age. According to some stoic philosophers, Homer already possessed, though perhaps in embryonic forms or hidden in his poetry, much of the knowledge of the contemporary age. Crates of Mallus (2nd cent. BC) even interpreted some of the poet’s verses in light of the spherical shape of the earth! Among the Alexandrians, Eratosthenes vigorously opposed the modernizing interpretations of the stoics, emphasizing instead the distance between the broadening of modern geographical learning and the still limited and uncertain knowledge present in epic poetry (Strab. 1.3.3).25

The themes and arguments of this debate can be followed in Strabo’s *Prolegomena*.26 A whole series of questions, related to the limits of the ecumene and the continuity of the ocean, to the winds and orientation, to the movements of the sea, to the floods of the Nile, directly involve the interpretation of Homer. By confronting conceptions of the epos, therefore, “scientific” geography also acquires a historical perspective. Thus the treatises of Eratosthenes and Hipparchus open with a retrospective glance, their point of departure is naturally constituted by Homer. Strabo therefore is certainly not the first

24 Baladié 1980.
to give a historical dimension to the periegesis of the ecumene, and even his interest in the history of geography is already part of the Hellenistic tradition.

Strabo’s improved rendering of the ethnographic and geographic description of the regions of Western Europe (books 3–4) derives primarily from his use of Posidonius, while his description of the coastal countries of the Mediterranean conserves the periplus tradition as re-elaborated by Artemidorus of Ephesus. The books dedicated to Greece are dominated instead, as has been said, by an interest in archaic history and questions of Homeric topography. The books on Asia Minor (12 and 14), on Syria and Palestine (16) bear the imprint of Hellenistic-Roman history. In the sections on India (15), Strabo draws widely on the historians of Alexander the Great, on Megasthenes and Eratosthenes. In his description of Egypt and Africa (17) the bookish sources are enhanced by the author’s own personal observations. A study of the sources (Quellenkunde) has successfully attempted to isolate those parts of the Geography for which Strabo drew on the work of several authors. Even when they trace back to a single author, however, these sections contain layers of the tradition.

Like Polybius (3.59.3), Strabo also underlines (1.2.1; 11.6.4) the importance of military campaigns and conquests for the expansion of geographical knowledge; in Western Europe thanks to the Romans, in the Pontic regions thanks to Mithridates Eupator, in Hyrcania, Battria and Asiatic Scythia, thanks to the Parthians. Especially with regard to recent events, of which he himself is directly or indirectly a witness, Strabo provides information that he was able to gather firsthand from the circle of his acquaintances and patrons. His preference, however, is for literary sources and he does not conceal his negative judgment of the Latin authors, who limit themselves to translating the Greeks without adding anything new, so that when the Greeks die off the void cannot be filled (3.4.19). Extra-literary sources are not held in high account (sailors and merchants: 2.5.11–12) and, although he draws with both hands on the tradition of the peripli, he judges them unscientific (1.1.21). It is rare that he manifests a keen interest in the administrative divisions of the empire (Iberia: 3.4.19–20; Egypt: 17.1.12). Its organization into senatorial and imperial provinces is illustrated only in an appendix to the work (17.3.24–25), while the historical process of its formation is traced summarily at the end of book 6 after the laudes Italiae (6.4.1–2). In his teleological considerations on the advantageous position of the peninsula and on its centrality, which determined the ascent

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27 Biffi 1999; on the expedition of Aelius Gallus see Nicolet 1988, 126 and n. 4.
28 For a review of the literature see Dueck 2000, 182–186.
29 Biffi 2010.
of Roman power, Strabo assigns to Italy the same geographical vocation to
dominion (πρὸς ἡγεμονίαν εὐφυῶς ἔχει), that Ephorus had discovered in the
Boeotia of his era (in Strabo 9.2.2) and that Aristotle looked for in Minoan Crete
(Pol. 2.9.1271b). In any event, the regions of the ecumene are described accord-
ing to their traditional ethnic divisions. It is certainly not questions of adminis-
trative boundaries that attract the attention of Strabo, who finds himself more
at ease when he attempts to reconstruct the political geography of Homeric
Greece, making recourse to the entire arsenal of Hellenistic “archeology”, or
when he traces the borders of “ethnic” regions in harmony with the divisions
suggested by the “nature of the places”.31

His complete adherence to the ideological reasons for the new order
founded by Augustus is expressed repeatedly in the pacifying and civilizing
function performed by the Romans throughout the world.

2.5.26: “The Romans, too, took over many nations that were naturally sav-
age owing to the regions they inhabited, because those regions were either
rocky or without harbours or cold or for some other reason ill-suited to
habitation by many, and thus not only brought into communication with
each other peoples who had been isolated, but also taught the more sav-
age how to live under forms of government” (transl. Jones 1917).

The superiority of Europe—“admirably adapted by nature for the development
of excellence in men and governments”—is by now decidedly assured by, not
only the ancient political and technical virtues of the Greeks, but also by the
capacity of the Romans to make the savage peoples participants in their politi-
cal civilization. This is the justification given for the Roman dominion in the
stoic vision of universal history.32 The same evaluative criterion, which guides
the geographer’s selective outlook, explains the superiority of the regions bor-
dering on the Mediterranean. Strabo’s interest is directed programmatically to
those countries in which the institutional framework of the nations and their
cities ensure the full unfolding of human activities, or with whom relation-
ships and commerce are easily started up and maintained (2.5.18; cf. 1.1.6).
Recognition of the civilizing work of Rome takes on tones of open admiration
in the description of Western Europe (Iberia, Celtica, the Alpine territories),
but it is lacking in the regions in which Greek culture still conserves its vitality
in the lifestyle of the cities. It is significant that in his description of Italy, these

31 The political-administrative situation of Cappadocia constitutes an exception worthy of
two perspectives are both present. In Cisalpine Gaul, Romanization translates into civil and material progress, thanks to the colonies, the road network, and productive agriculture, (5.1.4–12), but in Lucania and Bruttii it coincides with political and cultural decadence of what had once been Magna Graecia (6.1.1–15).

2.1 Geography according to Strabo
In the two introductions of the proem (1.1.1–23; 2.5.1ff.) Strabo offers the most elaborate reflection that antiquity has passed down to us on the nature of geography, the tasks of the geographer, and his audience. The geographer must possess a wide range of knowledge (πολυμάθεια)—of physics, astronomy, and geometry—all of which are necessary to that total vision of the world which, embracing things “human and divine,” is proper to philosophy. Strabo commits himself totally to theorizing about the fundamental bases and the field of study of geography, taking full advantage of his reading of the very authors whom he willingly subjects to criticism, at times distorting their views. Without making any original contribution to the scientific acquisitions of Hellenism, his theoretical commitment aims to recompose along the lines of Posidonius the unity of geography, bringing together the legacies of Eratosthenes and Polybius. After Eratosthenes, in fact, mathematical-astronomical science and its cartographical applications had decisively taken a separate path with respect to descriptive geography. Hence the ambitious objective of transmitting this knowledge in its entirety in such a way as to make it accessible to private citizens possessing adequate intellectual training, but above all to those ruling elites responsible for the military control and the government of the empire. It is understandable, then, that in passing from the theorization of geographical knowledge to its prevailing practical purposes, Strabo tends to downplay its scientific principles in order to accentuate its politico-military applications. These oscillations in his work clearly reflect the double task assigned to the geographer.

1.1.1: “The science of Geography, which I now propose to investigate, is, I think, quite as much as any other science, a concern of the philosopher; and the correctness of my view is clear for many reasons. In the first place, those who in earliest times ventured to treat the subject were, in their way, philosophers—Homer, Anaximander of Miletus, and Anaximander’s fellow-citizen Hecataeus—just as Eratosthenes has already said; philosophers, too, were Democritus, Eudoxus, Dicaearchus, Ephorus, with

33 Tozzi 1998, 23–43.
several others of their times; and further, their successors—Eratosthenes, Polybius, and Posidonius—were philosophers. In the second place, wide learning (πολυμάθεια), which alone makes it possible to undertake a work on geography, is possessed solely by the man who has investigated things both human and divine—knowledge of which, they say, constitutes philosophy. And so, too, the utility of geography—and its utility is manifold, not only as regards the activities of statesmen and commanders but also as regards knowledge both of the heavens and of things on land and sea, animals, plants, fruits, and everything else to be seen in various regions—the utility of geography, I say, presupposes in the geographer the same philosopher, the man who busies himself with the investigation of the art of life, that is, of happiness” (transl. Jones 1917).

1.1.16: “And that other argument, it seems to me, is adduced with especial force in reference to present-day conditions, namely, that the greater part of geography serves the needs of states; for the scene of the activities of states is land and sea, the dwelling-place of man. (...) It is, therefore, plain that geography as a whole has a direct bearing upon the activities of commanders; for it describes continents and seas—not only the seas inside the limits of the whole inhabited world, but also those outside these limits. And the description which geography gives is of importance to those who are concerned as to whether this or that is so or otherwise, and whether known or unknown. For thus they can manage their various affairs in a more satisfactory manner, if they know how large a country is, how it lies, and what are its peculiarities either of sky or soil” (transl. Jones 1917).

It is worth pausing to consider this point because it can help us to clarify the reasons for the poor reception accorded to Strabo, not only by his contemporaries, but also by the Latin authors of the first imperial age. If one considers the content of the descriptive books, there is no doubt that they are meant to serve the interests of a cultivated and aristocratic audience, which is first of all located in the Greek and Hellenistic cities of the empire, aware of their history and their traditions, but which is also made up of the upper classes of Roman society, who were educated in the schools of the Greek rhetoricians, grammarians, and philosophers before going on to occupy administrative posts in the provinces. In theory, nothing precludes us from thinking that a Roman governor destined to serve in Greece or Asia could have read the Geography with some profit. But to what extent would his knowledge of the epos have allowed

him to appreciate Strabo’s predilection for the most minute and controversial questions of Homeric topography? On the other hand, the administrative and military demands of the empire produced a massive amount of firsthand information made available in official accounts. As for military campaigns, the general army staffs of every era have always preferred to ensure direct access to the necessary information by way of recognizance missions in the field or by making use of local informants or commissioning ad hoc preliminary reports on conditions in the country. For the deployment of legions to ensure the territorial control of the provinces, the hard data provided by the itineraries were much more useful than an erudite historical chorography. While he proclaims the practical utility of geography, and particularly of his geography, Strabo does nothing to hide his reluctance to draw on extra-literary sources. Furthermore, if Agrippa is really “the chorographer” to whom Strabo often refers for several distances in miles in his description of Sicily and Italy, his silence with regard to the map displayed in the Porticus Vipsania\footnote{On this question see Arnaud 2007–2008.} becomes even more enigmatic. Finally, most of the sources used by Strabo also figure among the numerous authors cited by Pliny the Elder (\textit{NH} 4–6), who, however, fails to cite Strabo.

There is no doubt that the building of the empire broadened geographical knowledge, and it is also evident that the empire’s management required a set of technical, statistical, logistical and informational instruments.\footnote{Nicolet 1988.} It would be misleading, however, to claim that universal geography is a typical product of this era inasmuch as it mirrored the ecumenical aspirations of the Roman empire. Universal geography was born in Asia Minor (Ionia) in other historical conditions and it reached its highest level in the course of the Hellenistic age, a level which Strabo at least has the merit of conserving and handing down to his successors. The modern appreciation of Strabo’s work of geography, and above all of its extraordinary documentary value is, in fact, conditioned on the loss of the Hellenistic literature, which he largely drew upon.

Utilized in the East by the Byzantine scholars, Strabo’s \textit{Geography} was translated into Latin some fifty years after the latin translation of Ptolemy’s \textit{Guide} (ca. 1410), and it quickly became a model for the descriptive geography of the Renaissance. Sebastian Münster, author of \textit{Cosmographia}, one of the greatest publishing successes of the 16th century, came to be called “the German Strabo.”\footnote{Broc 1986\textsuperscript{2}, 76–84.} To defend the universalist conception of an academic discipline focused on both nature and history, the geographers of the 19th century willingly made reference to the example of Strabo. They found themselves in
harmony with the theoretical positions of the Strabo’s proem, while not always identifying with the way in which they are put into practice in the 15 books of his periegesis. Even today, it happens occasionally that a geographer in search of an identity begins to conceive of himself a bit as a “philosopher,” discovering in Strabo an illustrious predecessor.

FIGURE 14.1 The world map of Eratosthenes: a reconstruction, after Aujac 2001 (Courtesy of C.T.H.S.).
FIGURE 14.2 The four parts of cis-Tauran Asia (Strab. 11.1.1–7) (Courtesy of CUF, Les Belles Lettres Édit., Paris).

CHAPTER 15

News from the East? Roman-Age Geographers and the Pontus Euxinus*

Eckart Olshausen

1 The Issue

The enormous territorial gains—partly by conquest, partly by bequest—which moved the boundaries of the late republican and early imperial Roman Empire to distant parts of the world, among others to the Pontus Euxinus (the Black Sea)—raise the question whether the impact of this dramatic development caused a significant change of the ways in which the Pontus Euxinus was viewed from a geopolitical as well as a geographical perspective.1

1.1 ‘Pre-Roman’ Knowledge about the Pontus Euxinus

The Greeks had at that point known of the Pontus Euxinus for a long time and become familiar with it.2 At the time of the great Greek colonization3 they acquired profound knowledge of it as they set up numerous settlements along its shores. In the beginning the practical matter of exploring the sea lanes took precedence, which may have resulted in naval manuals, whose literary remainders are, however, mostly no more than fragmentary bits and pieces of *periploi.*4

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1 Nota bene: The focus is exclusively on the geographers’ knowledge of the Pontus Euxinus, not on the level of information about it in the Roman world in general.
3 Cf. Wittke, Olshausen, and Szydlak 2007, 68f., including sources and literature.
4 Cf. e.g. Ps.Scyllax, the anonymous author of a *periplos* of the three continents Europe, Asia and Africa (4th cent. BC), who wrote under the assumed name of the famous seafarer from the court of the Persian King Dareios ι (522–486). His right-to-left description of the coast of the Pontus Euxinus bridges the Tanaïs (Don), the borderline between Europe and Asia (67–91). Cf. also Ps.Scymmnos, the anonymos author of a fragmentarily preserved iambic periegesis dedicated to King Nicomedes (probably Nicomedes 11 Epiphanes, 149–128). It also circles the Pontus Euxinus, setting off from a place called Philia (722f.) to the polis of Thynias on the island of Apollonia (1025f.), proceeding to the left.
Aristotle (384–322) then theorized about the Pontus Euxinus and the properties of its currents. Eratosthenes in his *Geographika* likened it to a Scythian bow—an image that gained wide currency. Hellenistic mythographers were fascinated by the Pontus Euxinus. The epic narrative by Apollonius Rhodius (3rd cent. BC) about the expedition of the Argonauts has been preserved. As a librarian at Alexandria and as such a predecessor to Eratosthenes, he traced a route that crosses the Pontus Euxinus from the Thracian Bosphorus to the river Phasis (today Rioni) and then turns back to the mouth of the Istros (Danube) via that of the Halys (Kızılırmak). There can be no doubt that the Argonautic myth is older than the Homeric narratives. Nevertheless, the geographical knowledge at Apollonius’ disposal was definitely more up to date, in spite of the fact that Alexander’s expedition bypassed the Pontus Euxinus, thus perpetuating traditional misconceptions instead of correcting them.

The historian Polybius (2nd cent. BC) used *periploi* and scientific sources in his *Roman History* to expound the historical and geographical circumstances of the trade war waged by Byzantium against Rhodes in 200 BC. Although he wrote his history in the Greek language it seems to have generated much interest in Rome. It was then at the latest that the Roman senatorial class acquired some knowledge about the Pontus Euxinus—unless some literate Romans had already gleaned some information from the works of Herodotus and especially Xenophon beforehand.

1.2 *The Roman Senate and the Pontus Euxinus*

Long before Nicomedes IV died (74 BC), bequeathing his Bithynian kingdom to Rome, and long before Pompey installed the twin provinces of Bithynia et Pontus as part of his reorganization of the Near East (63 BC) thereby moving

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7 Cf. Kubitschek 1933.
10 Polyb. 4.39–43. For the Pontus Euxinus, he may have used Strato of Lampsacus as his source to whom he refers critically in 12.25c. In that very report he rebukes the use of tales by merchants, seafarers and poets, while using their information in the same context.
11 About the western and northern tributaries to the Pontus Euxinus (4.47–58) as well as the sea itself (4.85f.).
12 On the routes from Trapezus to Harmene (*Xen.*, *An.* 4.7.21–6.1.14) and from there across the Tracian Bosphorus to Salmydessos (*Xen.*, *An.* 6.2.1–7.7.57).
the Eastern border of the Roman Empire to the shore of the Pontus Euxinus, the Roman senate had been aware of the existence of that body of water.

Ever since the conflicts with Queen Teuta of Illyria, which led to the so-called First Illyrian War (232–228), the Roman senate had set its sights on the world of the Eastern Mediterranean—with growing intensity. This set off a chain of actions: The senate had—while the Second Punic War was still raging—the sacred stone of the Magna Mater removed from Pessinus in Asia Minor and taken to Rome on account of a Sibylline oracle. Although Rome was not formally allied to any state in Asia Minor, the senate had been on friendly terms with Attalus, the king of Pergamon, since the days of the First Macedonian War (215–205)—and it was he who brokered the transfer of the sacred stone to Rome.13

Subsequently Roman emissaries were again and again involved in negotiations concerning the relations between cities and kingdoms in Egypt, Syria and Asia Minor.14 Thus the diplomatic activities between the senate and various dynasts in the Eastern Mediterranean were particularly intensive, when towards the end of the third cent. BC the balance of power among the three large monarchies—the Antigonid, the Seleucid and the Ptolemaic Empires—, became unstable and finally broke down. This is the context in which the diplomatic activities of M. Aemilius Lepidus need to be seen: He visited Ptolemy V in Alexandria, accompanied by two senatorial colleagues, in 201, and followed this up in the year after by an unaccompanied visit to Philip V in Abydos on the Asian coast of the Hellespont in order to hand him the senate’s ultimatum that would usher in the Second Macedonian War.

Roman diplomats also played a part in the disputes between the Attalid Eumenes II and Pharnakes, the king of Pontus, which resulted in the Pontic War (182–179). The two monarchs had sent envoys to Rome in the spring of 182. Simultaneously delegates from Rhodes arrived in Rome, who pleaded on behalf of Sinope, an allied city on the South coast of the Pontus Euxinus, which had been conquered the year before by Pharnakes. As a result the senate dispatched a commission to the East with a brief to investigate those conflicts. Fighting had already broken out when the senate—as a reaction to the commission’s report—sent another delegation to Asia Minor. Subsequently a third delegation was ordered to travel to Pergamon for an additional perspective.15

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14 Documented in Knibbe 1958, 23ff.
15 Polyb. 23.9.3; 24.1.2f. Further evidence in: Knibbe 1958, 70ff.
The senatorial involvement in matters concerning the Pontus Euxinus reached a new level of intensity when after the Pontic War (182–179) the town of Chersonesos, situated on the Tauric Chersonese peninsula, forged a defensive alliance with the king of Pontus against the permanent threat of Scythian incursions. An inscription has been preserved which contains the oaths of the Chersonites and the Pontian King Pharnakes, underpinning the treaty.\footnote{The wording of the two oaths contains identical passages emphasizing the friendship with Rome as a guarantee for the stability of the contract.}{16}

1.3 The Roman Provinces Bordering the Pontus Euxinus

The South coast of the Pontus Euxinus came to be ruled directly by Rome when in 74 BC Nicomedes IV died, who had bequeathed the Kingdom of Bithynia to Rome. Thus the possession of the coastal strip ranging from the promontory of Hieron on the Thracian Bosphorus to the mouths of the Billaios or Parthenios rivers\footnote{Strab. 12.3.8; Mela 1.104 (Billaios), Men., Per. 5801.7 (Diller 1952, p.152); Plin., HN 6.5 (Parthenios).}{18} had moved the boundary of the Roman Empire to the Pontus Euxinus. In the course of various Roman provincial administrative reforms this area would finally expand as far as the mouth of the river Phasis (Rioni) at the foot of the Caucasus, when Arrian, acting as a propraetorial legate, was in charge of the province of Cappadocia from 131 to 137 AD.\footnote{Cf. Wittke, Olshausen, and Szydlak 2007, 182ff.; 271 with sources and literature.}{19}

Between 75 and 28 BC there were several occasions on which the West coast of the Pontus Euxinus South of the estuary of the Istros (Danube) was affected by Roman measures as if part of the province of Macedonia;\footnote{E.g. under the proconsuls of Macedonia C. Scribonius Curio (75), M. Licinius Lucullus (72), C. Antonius Hybrida (who suffered a disastrous defeat at the hands of rebels in 59), and finally M. Licinius Crassus, who completed the pacification of the region on the Pontus Euxinus which was to become the province of Moesia (29/28). Cf. Lica 2006.}{20} however, it was only in the reign of Emperor Claudius in 45/46 that this territory was actually separated from Macedonia to be constituted as the province of Moesia.\footnote{ILS 986. Cf. Wittke, Olshausen, and Szydlak 2007, 184ff., with sources and literature.}{21}

There were only very few occasions when Rome acted directly as in the temporary stationing of navy units in areas beyond the mouth of the Istros in the West and the Phasis in the East. Such matters were usually handled indirectly through the use of proxy clients as a matter of principle.\footnote{Cf. Stein-Kramer 1986, 50ff.}{22}
New Geographical Knowledge on the Pontus Euxinus Gained in the Roman Age?

In antiquity authors as a matter of principle rarely name their sources. This also applies to geographical publications, and in the final resort this also goes for Strabo, although he is probably marginally more generous with such information than his colleagues. This makes it so difficult to trace the sources of geographical works that in many cases we have to be satisfied with hypotheses of more or less probability.

The following selection of geographical writings concerned with the Pontus Euxinus or referring to it includes texts that have either come down to us directly or as significant fragments from the period between the setting up of the Province of Bithynia et Pontus by Pompey (63 BC) and the transferral of the Roman imperial court to Byzantium (330 AD). From that point of time the main administrative centre of the Empire was situated so close to the Pontus Euxinus that the latter acquired a completely new geopolitical weight within the Empire. The extensive descriptions offered by Ammianus Marcellinus and Procopios give ample proof of this change.

The authors in question are: Menippus of Pergamon, Strabo, Pomponius Mela, Pliny the Elder, Arrian and Ptolemy.

2.1 Menippus of Pergamon

This early Augustan author composed three volumes of a Periplus of the Inner Sea; by this he refers to the Mediterranean Sea and its various sections, in contrast to the all-encompassing Ocean. The work has only been preserved in an epitome by Marcianus, in fragments from the writings of Stephanus of Byzantium (6th cent. AD) and as part of an anonymous periplus of the Pontus Euxinus (6th/7th cent. AD). Menippus guides the reader from the sanctuary of Zeus Urios on the Eastern shore of the Bosphorus to the river Iris (Yeşilırmak) in Pontus. For the description of the stretch between Chersonesos on the Tauric Chersonese (Crimea) and the estuary of the river Tyras (Dniester) he quotes the Geographumena of his contemporary Artemidorus of Ephesus.

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23 Amm. Marc. 22.8.9–48.
24 Procop., Goth. 4.2–6.
25 D 5603f.-D 6023. Diller 1952 complemented the surviving fragments of Menippus’s text with additions from the anonymous Periplus of the Pontus Euxinus and with the Menippus fragments contained in Stephanus of Byzantium’s lexicon in order to extend the description across the Iris as far as Philia (154–156).
26 FGrHist 438.
No other authors are mentioned. Artemidorus did a lot of travelling, but we do not know whether he ever set eyes on the Pontus Euxinus himself.

2.2  **Strabo**

Strabo was a contemporary of Augustus. His *Geographica* are the only geographical description of the ancient world that has survived in what is more or less its complete state. He failed, however, to compose a circular *periplus* of the Pontus Euxinus. The work covers a collection of coastal stretches adding up to the sum of what he considered worth reporting about the Pontus Euxinus.\(^{27}\)

Strabo was born at Amaseia in Pontus. Nysa in Caria was one of the many places he visited for educational purposes or came to know on his travels around the world. Judging from the detailed accuracy of the description of his place of birth he had thorough personal knowledge of Pontus as well as of parts of the Pontus Euxinus.\(^{28}\)

Among Strabo’s sources on the Pontus Euxinus Homer plays an outstanding part.\(^{29}\) He also relied on mythic sources such as the myths of the Argonauts, the Amazons, the Golden Fleece and the Trojan War. In the same vein he gleaned advice from poets such as Archilochus (7th cent.), Pindar (6th/5th cent.), Euripides (5th cent.), Alexander the Aetolian (3rd cent.) and Euphorion (3rd cent.).

The list of prose writers he used as witnesses consisted of the historians Hellanicus of Lesbos (5th cent.), Ephorus (4th cent.), Theopompus (4th cent.), Callisthenes (4th cent.), Palaephatus (4th cent.), Dionysius (4th cent.), Menecrates of Elaea (3rd cent.) and Apollodorus (2nd cent.). He also referred to the geographical writings by Scylax of Caryanda (5th cent.), Eudoxus of Cnidus (4th cent.), Zenodotus (3rd cent.) and Eratosthenes (3rd cent.).

All of them are exclusively figures of authority from the time before the Roman Empire reached the Pontus Euxinus with Nicomedes’ bequest. There were very few authors who published material on the subject after that event to provide Strabo with source texts: Apollonides, a geographer of the Mithradatic age, describes in one of the surviving fragments of his *periplus* of Europe how the rivers Halys and Iris deposit sediments in the Pontus Euxinus.\(^{30}\) Strabo, however, does not quote this work referring to this geological phenomenon on

\(^{27}\) Strab. 7.3.19–7.4.8 (Tauric Chersonese: 7.4.8); 11.2.1–19 (from the Tanaïs to Colchis); 12.3.1–40 (Pontus); 12.3.40–42 (Paphlagonia); 12.3.42–12.4.7 (Bithynia); 7.6.1f. (from the Istros to Byzantium); 7.3.13–19 (from the Istros to the Borysthenes).


\(^{29}\) Kahles 1976.

the South coast, but on a historical topic—the number of sons of Scilurus, the Scythian king on the Tauric Chersonese. On this point, Strabo also includes the opinion held by the philosopher Posidonius—we do not know, however, from which of his writings the quotation was taken from (On the ocean and the adjoining lands?).

He refers to his older contemporary Theophanes, Pompey’s personal biographer, in the context of a discussion on the sources of the river Tanaïs (Don), about whose upper reaches very little was known in those days, but he does not favour Theophanes’ opinion over those of the rest.

Strabo also quotes Hypsicrates, another older contemporary of his, who—in a historical work the title of which has not been preserved—enlarges on an episode in the history of the Bosphorean empire under the reign of Asandros (44–16 BC), who defended the peninsula of Kertch against Scythian incursions from the West by closing off the isthmus of Theodosia with a defensive barrier. We do not know what source Hypsikrates used. Being a native of Amisus, he may in fact have learned about this fortification from talk in the harbour.

The information about the world surrounding the Pontus Euxinus passed on to the readers frequently focusses on Roman warfare and administrative activities (Lucullus, Pompey, Caesar, Marc Antony, Augustus), also on features of the landscape, but there are only very few references linking history and geography—although Strabo once mentions that the Danube played an important role as a route for transporting military goods and provisions.

2.3  **Pomponius Mela**

Mela was a contemporary of the Emperor Claudius. This Spanish-born Roman geographer authored a three volume *Chorographia*. It contains a *periplus* of the Pontus Euxinus in two parts: an Asian section (1,102–117) and a European one (2,1–23).
The perihegetes follows a trail of myths, such as the founding narratives of cities (Heraclea Pontica, Cynchos north of Phasis, Dioscurias, Chersonesus) as well as the myths of Hercules and Echidna, Iphigenia and Orestes, Castor and Pollux, Cerberus and his cave, the Golden Fleece, Achilles and also the Amazons. Mela was obviously convinced of the historic nature of these myths, when he argued that the naming of Heraclea after Heracles added plausibility to the historic character of the foundation myth.

In those passages he fails to name any authors, and in other places he mentions only Homer, Hanno and Cornelius Nepos: The title of Nepos’s text is unknown, but quotations e.g. by Pliny the Elder and indeed Mela permit the conclusion that it contained detailed geographical information also about the Pontus Euxinus. Mela set great store by the topical character of his sources as his explicit reference to Nepos proves. Nevertheless, his protestations that on the whole he is using recent sources cannot really be trusted; in fact his description of the Northern shore of the Pontus Euxinus reflects in no way the findings that Lucullus and Pompey would have relayed back to Rome.

2.4 **Pliny the Elder**

C. Plinius Secundus was the author of a voluminous *Natural History* (*Naturalis Historia*). He lost his life on August 24, 79 AD, when Mount Vesuvius erupted. The four volumes (3–6) dedicated to geography also include a description of the Pontus Euxinus. It is, however, not presented as a unit, but divided into a European part extending to the left (West) (4.76–93) and an Asiatic one extending to the right (East) (6.1–22). Pliny considered the river Tanaïs (Don) to be the demarcation line between Europe and Asia.

In the passages concerning the Pontus Euxinus, Pliny refers to Eratosthenes, Polybius and Artemidorus, all of them writers who did not have the benefit of new information derived from Roman military expeditions in that region. Nepos, Varro, Agrippa and C. Licinius Mucianus, on the other hand, may well

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36 In fact this only applies to the stretch from the Bosphorus to the Tauri. Concerning the West coast, he does not refer to such sources.

37 Mela 1.103: *Heraclea vocitatur; id famae fidelis addicit.*

38 Mela 3.44f.; 3.90.

39 Plin., *HN* 6.5; 6.31.

40 Mela 3.45: *Cornelius Nepos ut recentior, auctoritate sic certior.*

41 Cf. Rostovtzeff 1931, 44.

42 Evans 2005; Skržinskaja 1977.

43 Cf. Plin., *HN* 3.3. Viewing the Tanaïs as the borderline separating Europe from Asia had a long tradition before Pliny’s time, cf. Ps.Scymn. 875; Ps.Scyl. 70.
have gained new insights on the Pontus Euxinus as fringe benefits of the military successes in the East achieved by Lucullus and Pompey.

However, Pliny found very few pieces of information in Cornelius Nepos’s geographical work plausible. In fact, unlike Pomponius Mela, Pliny held the credibility of Nepos’s data in low esteem. Nepos had no firsthand knowledge of Asia Minor, either personally or as an official, as he never held office within the *cursus honorum*. Anything he reported about the Pontus Euxinus was at best based on second-hand experience.

On the other hand, it is highly probable that M. Terentius Varro gained experience of the East as Pompey’s legate in the 3rd Mithradatic War (74–63). His *Legationes* would be a prize find, but apart from this title nothing else seems to have survived. These might have put first-hand pieces of information about the Pontus Euxinus at Pliny’s disposal. However, Varro fails to deliver recent data on this topic; instead he supplies estimates that long predate Pompey’s conquests.

Pliny also rejects M. Vipsanius Agrippa’s estimate of the circumference of the Pontus Euxinus, although he relies on his information in many other instances. From which of Agrippa’s writings Pliny’s materials have been taken is largely guesswork—but Agrippa’s *Commentarii geographicci* would fit the bill. Agrippa was concerned with the situation of the *Regnum Bosporanum* at various times, especially in the face of the turbulences of the civil war, which he stopped in 16 BC by simply showing up with his fleet at Sinope on the opposite shore. He did not travel much further on that sea, but there can be no doubt that he formed a clear idea of the *Regnum Bosporanum* both from a political and a geographical point of view.

C. Licinius Mucianus, another source of Pliny’s, was consul three times, probably under Nero and definitely under Vespasian. He visited Asia Minor on several official occasions and was thus likely to have had opportunities of making inquiries about the Pontus Euxinus. It was from his memoirs that Pliny—among other matters—gleaned an estimate of its size.

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44 Plin., *HN* 4.77; 6.5.
45 Vgl. Plin., *HN* 5.5.
48 Plin., *HN* 4.77.
49 Plin., *HN* 4.78; 4.81; 4.83; 4.91.
50 Plin., *HN* 4.77f.
2.5  **Arrian**

In 132/133 AD, in the reign of Hadrian, Arrian of Nicomedia (alias L. Flavius Arrianus in his Roman persona) was a propraetorian legate in the Province of Cappadocia. As such he travelled from Trapezus to Sebastopolis, i.e. along the Northeastern coast of his province, for inspection purposes. He then compiled a Latin report about that specific trip for the emperor and—based on different sources—followed it up by including descriptions of the remaining coastal areas in a Greek *periplus* of the Pontus Euxinus. Thus it contains the report on the inspection tour from Trapezus to Sebastopolis (1–11), followed by a description of the stretch from the Thracian Bosphorus to Trapezus (12–16) and finally the stage from Dioscurias to Byzantium via the estuary of the Tanaïs.\(^{51}\)

As Arrian had seen the stretch from Trapezus to Sebastopolis with his own eyes he did not need any special sources for it; it was rather his reminiscing as a highly educated Greek that made him bring up Homer, Xenophon, myths such as the tale of the Argonauts, of Orestes, Prometheus and Hephaestus along with the aetiologies of several cities. The bulk of specialist military detail is inevitable, considering the fact that this passage of the *periplus* is predominantly an inspection report.

As for his description of the Southern coastal route from the Thracian Bosphorus to Trapezus, Arrian is quite obviously guided by Xenophon’s *Anabasis*.\(^{52}\) Xenophon’s influence is still present when he comments on Salmydessos at the conclusion of the third part of the *periplus* from Dioscurias to Byzantium; for it was the beach of Salmydessos where Xenophon’s Ten Thousand turned Southward after their long march to the West.\(^{53}\)

The sources for Arrian’s *periplus* from Dioscurias to Salmydessos are difficult to ascertain. The accurate description of the coast from Dioscurias to Isiakon Limen (a place whose location cannot be pinpointed with certainty) may be explained as caused by the topical interest in some events at the Bosphorean royal court. In fact during Arrian’s inspection tour news reached him that Tiberius Iulius Cotys II had died in late 131 AD.\(^{54}\) It seemed possible that in the face of the Bosphorean power vacuum Hadrian might intervene. This did in fact not happen as Rhoimetalces, Cotys’s son, ascended to the throne without any complications. In all probability the familiarity with the coastal area from Dioscurias to Isiakon Limen documented by Arrian or his source was due

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52 Cf. Xen., *An*. 4.7–6.6. See also Bosworth 1993a, 244–246.
54 Arr., *Peripl. P.Eux*. 17.3.
to the fact that this kingdom had been Rome’s client since Asandros was recognized as king by Augustus.55

The description of the coast between Isiacon Limen and Salmydessus is far less detailed. This goes particularly for the lack of information concerning the stretch from Isiacon Limen to Psilon on the mouth of the Istros. Arrian’s source calls it “a nameless wasteland”, but this is an area where e.g. cities like Tyras and Niconion were situated. Should we really believe that a highly competent author such as Menippus of Pergamon,56 who has been considered as Arrian’s source, was capable of such blunders? The assumption of a lacuna in that part of Arrian’s source text is equally problematic.57

2.6 Ptolemy

Claudius Ptolemaios was a Greek scholar in Alexandria who was awarded Roman citizenship during the reign of the Adoptive Emperors (2nd. cent. AD). Among many other works he compiled a Geographike Hyphegesis (after 150 AD) to provide a foundation for a cartographic representation of the earth. For this purpose he included in his work (books 2 to 7) a list of all geographica of the oikoumene, with their positions identified by the intersection of longitudes and latitudes. Like Pliny, Ptolemy structured his material according to the three continents Europe, Libya (= Africa) and Asia.58 For this reason the Pontus Euxinus is not treated as a single unit. The coastline is subjected to further dissection as its parts are oriented along various “satrapies and provinces”59 within two continents:

In Europe:

• Thracia: from Anchialos to Byzantium (3.11.4f.)
• Moesia Inferior: from Cape Pteron to Mesembria (3.10.8); the estuary of the Istros (3.10.2–6); from the mouth of the river Axiaces to Harpis (3.10.14); from the mouth of the river Borysthenes to the Tanaïs Estuary (3.5.7–14)

in Asia:

• Sarmatia Asiatica: from the Tanaïs estuary to the mouth of the Corax (5.9.2–10)

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55 Lucian, Macr. 17.
56 Cf. the expressions of admiration by his contemporaries in Anth. Pal. 9.559.
57 Cf. Bosworth 1993a, 248 including the debate.
58 Ptol., Geog. 2.1.6.
59 Ptol., Geog. 2.1.8.
• Colchis: from the mouth of the Corax to the city of Phasis (5.10.2)
• Pontus et Bithynia: from Bithynias Acra to Cytoros (5.1.5–7)
• Galatia: from Climax to Amisus (5.4.2f.)
• Cappadocia: from Leukosyron Ankon to the mouth of the river Apsorros (5.6.2–7)

Ptolemy’s main source was the unfinished geographical work and lifetime achievement of Marinus of Tyros, whose existence is only attested by both laudatory and critical utterances in Ptolemy’s *Geographike Hyphegesis*; his work can be dated to the beginning of the 2nd cent. AD. Marinus’s special achievement was the sifting and collecting of detailed pieces of information from the body of geographical records available to him. Ptolemy also evaluated earlier writings himself, *e.g.* the ten volumes of the work by Timosthenes of Rhodes, one of the admirals of Ptolemy II.⁶⁰

3 Summing Up

In the days of Ptolemy the Pontus Euxinus had been part of the Roman Empire for more than 200 years; it was entirely accessible and developed, both politically and economically. Even in the Classical and Hellenistic ages it had been a well-known part of the inhabited world that no Roman needed to explore himself by autopsy; it was possible to learn about it from a wide range of literature well before Rome’s eastward expansion. Roman exploratory interest was shifting to the margins of the inhabited world—a geographical status the Pontus Euxinus had long left behind.

Arrian’s *periplus* did not add a substantial amount to the stock of knowledge about the Pontus Euxinus available in Rome. His personal in situ experience was too superficial as well as intermingled with Xenophontic reminiscences. Information about places and matters he had not gained himself he again lifted from Xenophon’s *Anabasis* and also from older *periploi*. One of these covered the West coast in a rather superficial manner, while another one offered detailed descriptions of the *Regnum Bosporanum*, especially the peninsula known as the Tauric Chersonese (Crimea), which had, as attested by reliable sources,⁶¹ functioned from the 4th cent. BC as the main granary in the Pontus Euxinus region for the Athenians. The question whether Arrian lifted his information about the coast of the Tauric Chersonese and the coastal areas adjac-

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⁶⁰ Cf. Ptol., *Geog.* 1.15.2; 4.
⁶¹ Cf. Dem. 20.29–35; 34.36; *Syll.*³ 206.15.
cent on both sides from Menippus’s writings cannot be answered, since the textual base of the preserved fragments is too small.

Pliny based his statements about the Pontus Euxinus largely on what had been known for a long time. He relied on Eratosthenes as a trustworthy witness. Varro and Agrippa may possibly have supplied new insights—but this cannot be proved beyond doubt from the text of his *Naturalis Historia*.

Pomponius Mela fails to inform his readers about the authors of his sources on the Pontus Euxinus; rather, he refers to “others”, to “Greeks and our authors” as well as “certain persons” who have passed various items of information on that body of water. Nevertheless there might possibly be the odd sound source among them, possibly Menippus of Pergamon. Mela’s description of the different coastal sections follows the same order as Menippus’s text. However, Mela does not produce any new insights either.

The most comprehensive description of the Pontus Euxinus is provided by Strabo. Unfortunately, in striving to liven up his geographical material, he makes lavish use of myths and poetry as well as of the works of historians and geographers of remote ages. This does not speak for the topicality of the information offered. More of the same may be derived from his personal expertise and experience—in keeping with his origin and biography—but his emphasis is less on the geographical characteristics of the Pontus Euxinus than on its history. Compared to other parts of his *Geographika*, here geography and history are less clearly kept separate. As for the Roman intervention in the region around the Pontus Euxinus, Strabo has nothing but praise for the efficiency of a power that created stability in the face of a complex and in some respects threatening situation.

Menippus of Pergamon was the earliest and thus the first of the authors discussed in the context of the geographers of the Pontus Euxinus. His *periplus* was admired as much by his contemporaries as it was by the late antique Greek geographer Marcianus, who put him in the same bracket as Artemidorus and Strabo, and particularly emphasized that Menippus’s *periplus* is of historical, not only geographical interest. Yet in Marcianus’s abridged version of Menippus’s *periplus* we find information about coastlines, river mouths, cities, inhabitants, anchorages and distances—but no historical references.

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63 Marcianus in *GGM* 1 566.4–8; 42–44.
4 Evaluation

Our initial questions were: Did the addition of the Roman provinces in the Pontus Euxinus region—gained largely by Pompey on the South coast and by M. Licinius Crassus (the triumvir’s grandson) on the West coast—generate a substantial increase of knowledge about that sea? And did this have a significant impact on the geopolitical and geographic status of that region? It seems that an unreserved answer in the affirmative is not possible. The Greeks had already compiled a body of geographical knowledge in the previous 600 years that was too weighty to be ignored. Practical knowledge had been collected in navigation manuals and put to everyday use; it had been transformed in myth and turned into literature such as poetry, travel reports and scientific treatises. This plethora of impressions had reached Rome ages before the lifetimes of Pompey and Crassus. They were well aware what awaited them geographically once they would reach the Pontus Euxinus—this had been common knowledge long before the empire reached the shores of that sea. All the same—some historical aspects of the region might still have had a certain news value. Strabo’s Geographika in general and especially his writings about his Pontic home region are a good example, as is Hypsicrates—as quoted by Strabo—and his reference to Asandros’s building a defensive barrier across the peninsula near Theodosia. This is why the loss of the historical references from the work of Menippus is such a tragedy. The numerous geographical writings no longer extant may have contained some similarly interesting historical perspectives. In the last resort, however, it must be doubted whether any additional geographical and historical details about the Pontus Euxinus might have taken the concepts of the Roman-era geographers significantly beyond what had been passed on to them by the Greeks.
FIGURE 15.1 Pontus Euxinus (Map of R. Szydlak).
Ancient science developed essentially through knowledge accumulation and speculation. In geography tradition weighed heavily and past paradigms were often imposed undisputed. However the analytical and reflexive role of ‘scientific’ approaches and the discovery of new territories contributed to the advance of real knowledge, framed into varied and diverse literary genres. In short, reason ultimately prevailed over mere curiosity or the basic need for knowledge.1

The reconnaissance of Iberia by ancient Rome must be understood as a cultural and literary product, resulting from the dialectic tension between tradition and innovation. Inherited theoretical models were confronted with autoptic data and the experience of military conquest. Discussion throughout this paper will follow this premise.

Until the arrival of Rome, Iberia had only been partially explored along its coastline on both sides of the Pillars of Heracles. After its conquest, there was an unprecedented qualitative increase in Iberia’s geographical perception. It gradually moved from Rome’s periphery to become an integral part of the Mediterranean world. Throughout this long process, the reality, history and geography of Roman Iberia was often explained and described according to traditional Greek ‘science’.

This is not the place to expand on the geographical image constructed for ancient Iberia from the seventh century BC until Rome’s arrival. It will suffice to say that it was greatly dependant on its condition as a periphery of Mediterranean history and geographical centrality.2 A large part of its territory

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2 Podossinov 2014.
was unknown, with the exception of the Mediterranean and nearest Atlantic coastlines. Iberia did not experience colonization to the extent of Italy or Sicily, staying clearly outside the Hellenic historical sphere, therefore the region was viewed as a geographical periphery.³ Moreover liminal territories were particularly favoured for staging myths. Precise topographies located in the unknown extremities of the world were needed to house gods and other creatures in supernatural and exotic landscapes.

The Pillars of Heracles became a cultural landmark, a frontier between the known world (order) and the unknown (chaos). They divided the Inner Sea from the Ocean, heralding all navigation into the Atlantic at a time when the confines of the world were being drawn. They witnessed combats between heroes and the gods of the underworld, while Greeks and Phoenicians were already cruising these same shores.⁴ Heracles and the Pillars were present in the first geographical references to Iberia in the Late Archaic period (Stesichorus,

³ Dominguez Monedero 2006; 2013.
fr. 184 Page PMG—cf. Apollod. 2.5.10; Pherec. FGrHist 3 F 18). It was a liminal territory known through the deeds of heroes. Herodotus was also influenced by the myth. His brief annotations on the river Tartessus and the presence of Samians and Phocaeans in the area were charged with mythical references to the limits of the world and the figure of Heracles as a cultural hero. The popularity and the persistence of the tradition was such that Hecataeus was forced to emphatically deny the existence of the Theban hero in the west. The myth survived in the writings of other authors, some as prestigious as Ephorus and Timaeus, the latter being heavily criticized by Polybius precisely for reproducing old stories, myths and legends. Strabo, for example, still dwelled on the debate concerning the location of the Pillars, which were alternatively placed in Gades or the Strait, clearly evidencing for the survival of a cultural and religious geography in geo-historical tradition.

The development of scientific geography was framed by studies measuring the diaphragm and the polemic concerning the habitability of northern latitudes arising after the journey of Pytheas. Nevertheless there were no considerable changes in the general panorama for Iberia, further than establishing the shape of the coastline and its condition as a peninsula bordered by the Pyrenees. Despite difficulties in transmission, data on the Mediterranean coast and its most important settlements, such as Gades or Emporion, may be found in periplus literature (Ps.Scylax, Ps.Scymnus or Avienus), although framed into a simplified ethnic context (Tartessians, Iberians...) and a religious topography more appropriate for sailors than for geographers.

In sum, Iberian geography prior to Rome’s arrival was basically constructed on a qualitative and cultural perception of space, because historical real-

5 Cruz Andreotti 1991a.
6 Hdt. 4.152 (Samians); 1.163–165 (Phocaeans); 4.8.1–3 (Heracles and Gades). See Cruz Andreotti 1999b. In general: Domínguez Monedero 2006; 2013; Cruz Andreotti 2002, 2004; 2010; Moret 2006.
7 FGrHist 1 F 26 (cf. Cruz Andreotti 2010; Moret 2004).
8 Strab. 3.5.5–6. Is a good example of the survival of this cultural outlook on the western limits of the world, which continued well into Roman imperial times. Heroes were the central characters in origin myths that preceded colonial and historical events. Strabo emphasized the distinction between the liminal landmark of the Columns of the Strait and the Phoenician Columns of Gadir’s temple; he respected Greek tradition, although he could not avoid mentioning other versions that still persisted. See Panichi 2013 (forthcoming).
9 Jacob 1997.
ity was not attractive to the external observer. In order for empirical experience to translate into geography, it also had to become of historical interest, created by events involving Greek cities, as well as its geographers and historians. Although Iberia’s coastline was frequented by sailors and merchants, who brought with them myths and legends, it was yet to be known by armies and colonists.11

Spatial perception only changed when the map became the centre of geographical debate among a very specific group in Alexandria. Leading figures, such as Pytheas, Eratosthenes or Hipparchus, broke with the cultural frontier represented by the Pillars of Heracles. Although Iberia was no longer a place constructed by heroes, it was not until Rome’s arrival that its physical characteristics were recorded into historical-geographical narratives, which subsequently replaced the Alexandrian cartographic tradition. This transition will be expanded on in the following sections.12

1 Rome and the Geography of Iberia

Roman occupation did not automatically imply progressive and exhaustive knowledge of Iberian territories. Physical reality was not transmitted through literature, but through generals, merchants, officers, magistrates and their endless reports, which were both public and private in nature. Aided by an obvious increase in information, knowledge transfer between the public sphere and the literary world was inevitable, although it was not as direct or straightforward as may be assumed. Knowledge and reconnaissance only played a part in a wider context of cultural perception. Governors and officers reflected on geographical information in order to understand very different and heterogeneous realities and construct comprehensible, global and indulgent narratives of the process of domination (cf. Strab. 1.1.16).13

This dialectic tension between reality and perception is best understood as part of a diachronic narrative, starting with the contribution of Greek tradition. The Romans did not view the Iberian Peninsula from the perspective of the traveller or the colonist—two very different points of views—but with the eyes of the conqueror, who intended to settle and exploit the territory, and needed to justify such a great human and material effort. The intellectual in charge of the task could not be a stranger to the previous traditions and

12 Prontera 1990; 1996b; 2006b; Bianchetti 2008a; Ciprés Torres, and Cruz Andreotti 1998.
13 Cadiou 2006.
realities, as much as the Roman occupation meant a radical change. In the ancient cultural tradition, knowledge was cumulative; geographical spaces were constructed as part of a continuum, in which the past was diluted into the present. Changes were also marked by previous conditions of places and their inhabitants, which at times seemed unalterable.

Inherited knowledge was also an important part of the cumulative process that conformed ancient cultural tradition. Alexandrian geography swiftly established itself as the canon, and no geographer of importance would have ignored it. From Ephorus onwards it was considered a necessary complement to any historical narrative. Hence Iberia’s cartography had to be revised, since it was no longer a liminal territory, but the western extremity of the known world and the final point of the diaphragm. Geography could not be understood without a map; the map defined form, extension and position. The Pillars ceased to act as a cultural frontier and it was the Sacred promontory that began to play this role, which in an east-west projection—an effective change in orientation—constituted the real finis terrae of the diaphragm. It was also widely accepted that Iberia was a peninsula, an important factor for establishing habitable spaces since Herodotus. In this way, Iberia acquired clear limits and became an integral part of the Mediterranean world. The Pyrenees were already considered its cartographic boundary, although they would only become a historical boundary once the conquest progressed. First it was necessary to establish the form and extension of the peninsula. The great contribution of the Alexandrian school was to open debate over issues that needed to be revised by geographers and historians, regardless of the varied critiques and opinions concerning the actual advances of this school.14

Scientists and historians, in varying degrees of preciseness, acquired a common cartographic language and descriptive uses. The coastline continued to be the main component in the initial configuration of a map, but the great chains of mountains and rivers gradually became the backbone of Iberia’s interior, used to calculate and articulate space. Bounded territories had to be defined internally (plain / mountain / coast / rivers), for these elements determined climatic and living conditions, which could by extension be used to describe the lives of their inhabitants, based on their natural and material resources.

Ethnic groups and communities also defined the personality of geographical spaces according to their degree of barbarity. Initially they were considered in terms of their resistance or adaptation to conquest and pacification. Some were ‘new’, but others were ‘ancient’—acquiring new meanings with Rome’s

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14 Prontera 2006; Bianchetti 2008; Gómez Fraile, and Albaladejo Vivero 2012; Marcotte 2006.
arrival, although, as will be seen ahead, never ceasing to retain a large part of their original essence. Iberia's ethnography during the Roman period alternated between discovery and stereotype, as numerous nuances were added to the concept of 'barbarian' (previous historical circumstances, natural conditions, degree of resistance to conquest...). Communities and peoples were presented in a harmonious and homogenous fashion, favouring the whole over the part, and renouncing exhaustive knowledge in lieu of offering a coherent image, a presentation, which was customary in geography from immemorial times.

Strabo’s words synthesize the extent of such a geography, which united nature with culture

2.5.14: “(…) It is necessary to conceive of a certain parallelogram in which the chlamys-shaped form is engraved so that its greatest length agrees with and is equal to the length [of the parallelogram] and whose width agrees with [and is equal to] its width. This chlamys-shaped form is the inhabited world”.

2.5.16: “Such being the shape of its entirety, it appears useful to take two straight lines, which cut across each other at a right angle, one going throughout the greatest width and the other length. The first will be one of the parallels and the other one of the meridians. Then one should think of lines parallel to these on either side, which divide the land and the sea that we happen to use. (…) But since these straight lines must be taken through known places, as is already the case (I mean the two central ones, for the length and the width, that I previously mentioned), the others will easily be determined by means of these. Using them as a kind of basic element, we can construct the parallel portions as well as the other positions of inhabited places, both on the earth and according to the heavens”.

2.5.17: “The sea most of all describes the earth and determines its form, by producing gulfs, the open sea, and straits, as well as isthmuses, peninsulas, and capes, with both rivers and mountains providing assistance. The continents, peoples, and the favorable situation of cities are understood through this, as well as the diversity that fills the chorographic plan, including the numerous islands scattered both in the open sea and the entire coast. Various [places] have various virtues and faults, and demonstrate benefits or difficulties, some according to nature but others according to human efforts. Those due to nature must be discussed, for they persist, but what has been imposed undergoes changes. In regard
to the latter, it must be pointed out that those which are strong enough to remain for a long time, or which do not [remain] for a long time but nevertheless have a certain distinction or reputation and last into later times, make a certain feature harmonize with the place so that it is no longer considered something created, and must clearly be recorded. (…) Nevertheless they find it pleasing to go to such and other places because of a desire to see the traces of memorable deeds, just like the tombs of esteemed men. Thus we have recorded customs and governments that no longer exist (summoned by their usefulness), in the same way as deeds, for the sake of emulation or avoidance” (transl. Roller, 2014).

Greek tradition served as a base for the elaboration of Rome's historical geography of Iberia, hence, it was not simply a geography of conquest or of romanization strictly speaking. Certain authors, presented below, marked historical periods by contributing significant changes to scientific knowledge, but above all, to the literary perspective of geographical space.

2 Polybius and the Conquest of Iberia

The most influential of these contributors to science was Polybius. He declared himself—in a characteristic attack of intellectual pride—the true discoverer of the west (Polyb. 3.58–59). He claimed to be the first to incorporate the west in real historical and geographical knowledge, while before it had only been the common place for myths and legends, or of fanciful speculations of ill-informed office historians. Roman armies—and particularly Scipio’s, which he accompanied—opened the way for him.¹⁵

Polybian geography followed in the line of Ephorus,¹⁶ completely subordinating any description to the historical purpose of the work (Polyb. 3.58.1; 12.25e.1). Considered to be a structural component to the nature of historical events, geography was not intended to transcend the purpose of causal

¹⁵ For the geography of Polybius see: Clarke 1999, sp. pp. 81–97; Cruz Andreotti 2004b; Pédech 1956; Prontera 2001b; 2003; Texier 1976; Walbank 1948. For the iberian Peninsula see: Cruz Andreotti 2003; 2006; Moret 2003a.

¹⁶ Polybius acknowledged the influence of Ephorus in his work, although in contrast to his predecessor, he limited the geographical information to a greater extent, distributing it throughout the entire written work, while the Cumaean was renowned for his long geographical introductions (Polyb. 5.33.1–2; 34.1.1–5).
explanation or the aims of a military narration. No literary concessions were allowed, which not only included rhetorical language, but also references to landscape, features, curiosities, stories, peoples, etc. that were not directly related to the events being narrated in that precise moment, generally dealing with military or political subjects, so as not to distract the reader from the main topic (Polyb. 9.2.1; 4.6; 12.25h; 12.26d). These works are better described as topographies or as chorographies, rather than as geographies in the traditional Greek sense (Polyb. 5.21.4–10). Each change in historical scene (especially in the western Mediterranean, which was practically unknown to the Greek reader) was accompanied by a geo-cartographic description, which could be regional or continental, but always simple and easy to remember (Polyb. 3.36.1–5). For example, sober descriptions of Italy’s geography (Po Valley, Sicily, the Peninsula) complemented the narration of military campaigns, such as the Gaulish conquest or the First and Second Punic Wars..., resulting in most cases in geographies useful for battle and military strategy (mountains and passes, plains, coasts, communication routes, strategic difficulties and advantages, resources, etc.). In fewer cases, geographies could also include information on the character, behaviour and ways of life of the communities encountered by Rome.

Nevertheless, without a cartographic base, it would have been impossible for the geographer to organize any historical narration with events occurring simultaneously in different places, particularly if he referred back to them several times (Polyb. 1.4; 5.21.4–10). Therefore Polybius was sometimes forced to make a pause in his narration to frame boundaries in a clear and comprehensible way, offering the reader a real lesson in geography (Polyb. 3.36–8). This is particularly true of his famous Book 34. Here Polybius reflected on issues that did not deal with military or political events, but rather with debates concerning Alexandrian geography, such as the reliability of sources, Homer’s historicism, the habitability of the hemispheres, etc. (cf. Polyb. 3.57.1–6, 58 and 59). Once the practical entirety of the western oikoumene was conquered, Polybius deemed it was the moment to revise Eratosthenes’ western sphragides
in its entirety and discuss certain theoretical issues arising from geographical astronomy and Pytheas’ travels in that part of the world (who he considered to be a dilettante—Pol. 34.5). Polybius called for a more empirical and credible approach (such as the one inferred from his descriptions of Iberia’s coastline on account of Hannibal’s journey to Italy), leading him to question the real extent of the Massiliot’s journey. His empirical approach reminds of the pre-Alexandrian tradition, for as Herodotus would say, one can only speak of what is really known.

The Iberia of Polybius was spatially constructed by Rome, leaving no room for past geographies. Polybius himself recognized that it would be more amenable to read about the marvels of the Strait of Gibraltar or the riches of the west, among other stories traditionally used by historians and geographers (Pol. 3.57.2–4), but rejected the notion, because it bore no relevance to what he was trying to portray at the time, the Second Punic War, which is when he appeared on scene for the first time. In fact, although it is evident that he knew that Iberia was a peninsula (as he will later state in 34.7 and 8), he initially only included the Mediterranean coast from the Pillars to the Pyrenees, and true to his method, recalculated distances with the new data available from Hannibal’s journey to Italy—Pol. 3.39. It was impossible for him to name the interior, because it was divided into numerous tribes, which could not be defined until they were conquered (Pol. 3.17.2, 36.1–4 and 37.11).

As conquest advanced, so did the reconnaissance of Iberia (topoi: Pol. 2.1.5; 3.13.2; 17.3, etc.). Territories were articulated around key natural features and, particularly, around ethnic groups, once they became known through contact with Rome and Carthage. The Iberians of the Mediterranean coast (on both sides of the Ebro river) played a central role during the Second Punic War. They organized themselves according to towns, ethnic groups and other minor yet significant family groups (Pol. 3.98.1, 7 and 9; 10.18.4) and were led by princes or chiefs (Pol. 3.76.6; 10.18; 10.34 and 35, etc.). Next in geographical proximity were the Celtiberians, an ethnic group ‘in transition’ that occupied a

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21 See Bianchetti 2005.
23 Prontera 2001b; 2003.
24 An exhaustive study with a complete bibliography: Ciprés Torres 1993; Cruz Andreotti 2003.
25 New data allowed him to recalculate the triangle formed by Narbonne at the vertex and the Strait of Messina and the Pillars on the sides (Prontera 2004b).
26 For the different conception of Iberia in Polybius (in a restricted or lax sense) see Moret 2003a.
FIGURE 16.2
The Iberia of Polybius (Courtesy of P. Moret).
territory between the coast and the interior (configurated by the Ebro river and the Idubeda chain of mountains). They constructed their territory by military expansion. At their highest peak, they occupied central Iberia up to the source of the Baetis river (Polyb. 3.17.2; 34.9.12–13; cf. Strab. 3.4.12 and Plin., *HN* 3.25, 26, 27 and 29), acquiring great fame for resisting the Carthaginians and later the Romans during the mid second century BC. Their expansion and military and political strength was reflected in their leading role at the time (Polyb. 3.5.1).27

Cartography occupied a secondary place in geographical knowledge. It was presented in a clear and simple manner, clearly distinguishable from the complex cartography of Alexandrian tradition based on parallels and meridians. For Polybius it was sufficient to delineate the Mediterranean coastline between the Pyrenees and the Pillars (the first area to come in contact with Rome)—Polyb. 3.34 and 39—and later establish only a few transversal features (rivers, such as the Ebro, Baetis, Anas or Tagus—Polyb. 34.9.12; 10.39.8 and 40.11–12, etc.) or longitudinal features (mountains, such as the Pyrenees and Idubeda—see Polyb. 3.17.2; 10.7.3), in order to give form and extension to the interior of Iberia, occupied by ethnic groups and/or recognizable towns, which only acquired concrete significance as the Roman armies advanced west and north. He managed to complete a map, simply by drawing the length of the Tagus from east to west (8,000 stadia and another 1,000 between the source of the Tagus and the Pyrenees), by locating the latter from north to south; and by detailing the route followed by Hannibal between the Pillars and Gaul (8,000 stadia). The result was an unfinished map, yet empirically demonstrated by his personal experience and first hand data (Polyb. 34.5.12–14). Iberia was depicted for the first time as a peninsula, with the Pyrenees acting as a clear boundary between Iberia and Gaul (Polyb. 3.37.9–11; 39.4). He defined the peninsula more clearly in book 34 in relation to other peninsulas of the western Mediterranean, presumably with the object of highlighting the centrality of Italy in the new world order. War, conquest and territorial control vertebrated and contributed preciseness to the geography and cartography of Polybius,

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27 See Ciprés Torres 1993; 2006; Beltrán Lloris 2004. Iberia’s ethnohistory by Polybius is full of significant historical detail, which differed greatly from the time’s descriptive stereotypes on barbarism (González Rodríguez 2003). For example, although Rome gave the Celtiberians their name and defined their historical nature, Polybius also recognized the complexity in Celtiberian social and political development prior to conquest, which was later only transformed and accelerated. In fact, the Celtiberians acted as a nuclear force in the formation of ethnic identities in central Iberia. Another example of social complexity may be found among the Iberians, who organized themselves around towns, families and *ethne*—complementary identities that alternated between times of war and peace. These are only two examples among others.
which was genuinely historical in nature: the ‘discoveries’ of the Pyrenees and the other mountain chains and rivers of the interior of Iberia were the result of the wars against Hannibal, Celtiberians and Lusitanians, which drove the Romans to the Atlantic—just as the ‘discovery’ and reconnaissance of Italy were also the result of these wars.28

Therefore space in Polybius only acquired meaning once it became historically relevant. For Polybius, there was no confirmed geographic reality if it was not inferred from data collected by politicians and military campaigns. This position explicitly contested the centrality of the cartographic geography defended by the Alexandrian school. Polybius argued that their obsession with centrality and the map had led them to establish a series of western boundaries based on extremely questionable data, when no map could exist without historical knowledge.

This ‘empirical geography of the present’ contested previous geographies based on traditional historiography. It constituted a Copernican revolution in the perception of the Iberian Peninsula. Iberia was no longer defined by cultural geographies, constructed on speculation and legend. It was no longer a missing piece in a cartographic puzzle, but a concrete place with geographic features that held a physical and historical relationship with Rome. Its personality derived from being a peninsula in the western extremity of the known world, a liminal condition that it ultimately renounced to become an integral part of the Mediterranean civilization.

3 Artemidorus and the Geography of Roman Settlement

It is not the object of this paper to expand on the debate concerning the authenticity of the so-called ‘Papyrus of Artemidorus’ or of the map that accompanied it, which was only recently found, creating just as much controversy. In any case, it appears that columns IV and V in the document, which referred to Iberia, constituted a selection of texts by Artemidorus—or attributed to him.29 The text differs from Stiehle’s fragment 21 and other sources in regards to the reference to Castulo, the question on Lusitania, the placenames Kilibe and Ipsa or the reference to the river Obleuion—Lethe, even in some of the partial measurements.30 However the importance of the Papyrus, as exposed

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29 Prontera 2012a, 184; D’Alessio 2009.
30 Moret 2012, 33.
by P. Moret,\textsuperscript{31} was the morphology given to space, which inevitably led to a cartographic representation. This is how it should be viewed in the light of the preceding tradition. The text of the papyrus allows for this.\textsuperscript{32} However the map that accompanied the text does not represent Iberia.\textsuperscript{33}

Therefore not much will be mentioned on the subject, only a few aspects that differentiate him from his illustrious predecessor (Polybius), and particularly from Iberia’s geographer par excellence, Strabo. Curiously the work of Artemidorus has only survived in fragments, despite the fame he enjoyed in life as a first-rate geographer (at least in Late Antiquity: Marcianus of Heraclea). This may be due precisely to difficulties in the transmission of ancient knowledge, as his work did not conform to tradition; he was neither a representative of the Hellenistic tradition from where he originated or of the emerging Roman perspective on geography.

Artemidorus, who followed Polybius by a few decades, differentiated himself in his cartographic design. His map, although apparently in revision, was nonetheless sealed with clear boundaries. The geography of Artemidorus does not resemble a geography of conquest, but one of political occupation, aided by incipient military and administrative mechanisms. Evidence for this change may be found in his territorial perspective (as that of Polybius), in contrast to the maritime perspective of Pytheas and Eratosthenes. Significantly, Strabo ignored Artemidorus in his first two books of \textit{Geography}, while discussing the purely cartographic tradition. However, he did use him as a source while developing the chorographic part, especially Book 3 on Iberia in such aspects as nature, ethnography or history—he references him up to 12 times! (\textit{cf.} Strab. 10.3.5).\textsuperscript{34} On the other hand, the information transmitted by the Papyrus limited itself to data on itineraries and cartography that allow for a ‘reconstruction’ of his map as an alternative to the map of Polybius. It may be that Strabo favoured Polybius in cartographic matters and only recognized Artemidorus for his chorographic or cultural-historical work.

\textsuperscript{31} Ibid.

\textsuperscript{32} The polemic concerning the authenticity of the Papyrus has been extensively dealt with by Luciano Canfora. A lighter approach to his position may be found in C. Schiano (2010). See Marcotte 2010a and 2012b for a measured and clear, general appraisal of the question. Follow up with Moret (2012) and Prontera (2012a), the edition of Gallazzi, Kramer, and Settis (2008) and the Colloquium edited by them in 2012. Also Pajón Leyra 2012.

\textsuperscript{33} Moret 2003b; 2012, in particular pp. 35–44, and Prontera 2012a, for the Ancient geographical tradition of drawing maps with different data as that contained in the text, at least until the appearance of the codex, see Prontera 2010.

\textsuperscript{34} Prontera 2012a; Panichi 2013 (forthcoming).
As represented on the Papyrus, Artemidorus described Iberia’s three sides in a simplified and schematic way, delineating the coastline and combining maritime and terrestrial distances at a time when Rome was constructing a network of reliable and secure roads. Iberia was conceived as a quadrilateral, where the eastern coast was shaped by the north-south projection of the Pyrenees; the northern coast by the gulf immediately west of these; the western coast by the cape of the Artabri, running south down to the Strait / Gades, where the Sacred Promontory marked the limit between Lusitania and the ‘region’ of Gades; finally, the Mediterranean bordered the southern coast. Four main rivers (Baetis; Anas; Tagus and Douro) terminated on the western façade, while only two did so on the southern side (Sucro and Ebro rivers). (P.Artemid. cols. IV 14–V 45).

He also used the newly established provincial territories and boundaries to organize space on the map. His work reflects close links with second century BC Roman realities, as well as with the work of Roman geographers, such as Varro and Pliny, evidenced through certain interpretative coincidences, such as the identification of Gades with the Pillars of Heracles (apud Strab. 3.5.5; Artemid. fr. 1 and 9 Stiehle; cf. Plin., HN 2.167; 242; 3.3 and 4). On the other hand, the work of Artemidorus differed greatly from that of Strabo, well known for his cultural excursus and lack of topographical precision, clearly seen for example in Strab. 3.1.4, where Strabo was more interested in the cultural role of the Sacred promontory, in contrast to Artemidorus, who was more interested in its exact topography and its diagrammatic role in the paraplo of the far west. Artemidorus not only constructed a new, complete map, in contrast to the unfinished design of Polybius, but also followed the Hellenistic
FIGURE 16.3  
The Iberia of Artemidorus  (Courtesy of P. Moret).
tradition (found in Eratosthenes) of articulating space around ethno-political
groups, defined as more or less barbarian according to their proximity to the
Mediterranean. Hence Lusitania was the most barbarian, while Gades was
the most civilized (P. Artemid. col. IV 13–14). Still, all territories were included
as part of one territory, Iberia / Hispania, which was dominated de facto by
Rome, a reality which allowed him to name all the interior territories.

In sum, Artemidorus united the most genuine Hellenistic tradition, as seen
in his map designs, with contemporary Roman reality. The establishment
of Roman power and administration allowed for him to construct Iberia's
spatial reality.

4 Strabo and the Historical Reconstruction of Iberia

Strabo will be the subject of more in depth analysis, for Geography is one
of the works of reference in ancient geography. Colossal and encyclopaedic
(Strab. 1.1.1; 15, 16 and 23), Strabo introduced the long tradition of ancient
acquired knowledge into Iberia's history and geography. In his search to cre-
ate an independent literary genre, Strabo united in his work various strands
of geographical practice, which although closely related, had evolved sepa-
rately. He joined historical and cultural geography, which had originated with
Herodotus and continued with Ephorus and Timaeus, with the Alexandrian
school, which focused on the creation of maps, and finally also with current
geography, which only acknowledged the existence of space after conquest,
one it acquired administrative and political meaning. This last geographi-
cal approach allowed for larger descriptions, which ultimately overshadowed
more analytical approaches during the Roman period. Strabo did not belong
to any one of these strands, which were not strictly defined in any case; he
incarnated a truly heterogeneous approach, which at times could seem confusing.
Strabo attempted to present his work in a coherent, harmonious and sim-
ple way, avoiding excessive technicalities or detail, although at the same time
keeping both with tradition and critical approaches. In sum, Strabo's work was
both rich and complex, due to the various approaches he adopted.

His first two books are clearly distinguishable from the rest. In them he
defined geography and revised the contribution of the Alexandrian school.

38 Abundant examples may be found in Strabo.
39 The Iberia of Artemidorus in the cartographic context of Polybius, Strabo and Pliny, is
extensively exposed in Moret 2012, 70–78.
40 Prontera 1984a; Cruz Andreotti 2007a.
The remainder are better characterized as chorographies, in which historical geography replaced the map. In sum, his map differed greatly from that of Artemidorus and even more from the maps of Eratosthenes and Polybius (revised through Posidonius). To start with, the longitudinal side of the triangle between Narbonne and the Strait measured 2,500 stadia, in contrast to the 2,000 mentioned by Polybius. Hence the Mediterranean coastline was more oblique. The Sacred Promontory projected more to the west, constituting the westernmost point on the map, parallel to the Pillars, while Artemidorus clearly distinguished its position from that of Gades. The result resembled a square, rather than a rectangle. Nevertheless none of this appeared to bear any relevance when in Book 3 he restricted the description of Iberia's shape to a simple comparison to a bull's skin, accompanied by data on its length and width, and the enumeration of a succession of capes and gulfs on its sides (Strab. 3.1.3). His public, learned readers, yet with no specific cartographic understanding, were offered enough information to gain a clear idea of the place (Strab. 1.1.21–22).

Book 3, which deals with Iberia, is more than just a sum of different sources; the use of some over others depended on the geo-historical development Strabo recognized for each territory. If there were references to a place prior to Rome's arrival, he cited ancient authors to support his historical perspective—as if dealing with archaeological evidence. Where there was nothing but barbarism and lack of civilization, Roman conquest was the only

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41 Prontera 1999; 2006b; 2007; Moret 2012, 73–76. His problems at understanding and adjusting cartographic delineation are well-known; one particular example has been quoted extensively: while in 2.4.3 he rejected the distance of 5,000 stadia offered by Hipparchus for the distance between the Gulf of Lion and Lybia, he accepted it in 2.5.8, without offering any conclusion on the length of Iberia, the western sector of the oikoumene or the latitudes of Massalia and Narbonne (in Strab. 2.4.4 and 5.27). His contradictions were possibly the result of not plotting his data on a work plan.

42 Trotta 1999.

43 Turdetania is the most significant example. Its origins were traced to Homer's nostoi, the mythical version of ancient colonization, and to the legendary Tartessus, characterized as the most ancient and prestigious western civilization. The region of ancient Tartessus experienced an accelerated economic and cultural progression, thanks to its privileged natural resources—a harmonious combination of valleys, coast, mountains and navigable rivers, which led to unprecedented agricultural production, fishing and mining activities developing around the valley's cities—and by external agents that favoured the area's growth, the last of which was Rome (Strab. 3.1.6 ff. and 1.2 passim). For all: Cruz Andreotti 1993; 2007b; 2010; Castro Páez, Cruz Andreotti (forthcoming).
FIGURE 16.4 The Iberia of Strabo (Courtesy of P. Moret).
recognizable past. He grouped ethnic units under a common name and a defined territory, bounded by large rivers and mountain chains. They were shaped by the complexity of war, but also by their resistance or capacity to absorb and communicate with urban Mediterranean cultures prior to the arrival of Rome. Rome only constituted one of various external and internal factors intervening in the ethnogenetic process experienced by Iberia’s ethnic groups. Although Iberia enclosed a heterogeneous reality, it was a physically bounded geographical unit. Its identification as a coherent cartographic entity—a peninsula—coincided from a historical point of view with its progression towards civilization, not necessarily understood as romanization.

The difference between interior and coastal communities was not as straightforward as a mere confrontation between civilization and barbarism. Conditions favouring urban development were made more difficult in the interior due to climate and topography. These were communities living isolated in the mountains rather than around well-connected and fertile valleys. While there is some truth to this geographical opposition, which Strabo used to structure his narration, it is no less true that other factors also played important roles in creating historical and cultural differences among Iberia’s communities. For instance, Lusitanians were rich in natural resources, but were considered backward and barbarian due to their practice of banditry and robbery, which Rome strove to terminate (Strab. 3.3.8). The same may be said of the Celtiberians, who were renown for their warrior culture, even though the Ebro valley offered the perfect setting for other ways of life. Only when they were finally defeated and pacified, their expansionist ambitions curtailed, did they begin developing urban ways of life, reduced by Rome to the limits of their

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44 Lusitanians, Galaecians, Asturi and Cantabri were located at the extremities of Iberia, and were only recognized as ethnic groups after conquest (Strab. 3.3 and 3.4.10 ss). Rome not only gave them their name, but also changed their ways of life by bringing them down from the mountains and grouping them around cities, as part of the process of pacification. Strabo overlooked minor ethnic groups and did not even identify them or attempt at replicating their unpronounceable names (Strab. 3.3.7). His attitude reveals his proximity to contemporary historical perspectives, which understood ethno-geographical landscapes only after their modification by Rome’s armies and administration. See García Quintela 2007 and Ciprés Torres 1993.

45 Turdetania was enclosed by the Baetis / Tartessus river; the Iberians by the coastline; Celtiberia by the Ebro river; Lusitania by the Tagus; and the mountain communities were brought down from the Cantabrian mountains to the plain. Counillon 2007.

46 Cruz Andreotti, and Ciprés Torres 2011; Cruz Andreotti 2014.

47 Counillon 2007.
historical territory (Strab. 3.4.20). On the other hand, even though the northern communities shocked the Romans with certain social or eating habits (such as gathering wild plants or cleansing with urine—Strab. 3.3.7 and 4.16), the result of their isolation, they also practiced ritual combat or hecatombs in the Homeric fashion, proving that they did uphold certain heroic values (Strab. 3.3.7), which Strabo did not disapprove. Coastal Iberians and Turdetanians were never able to form coherent unified states, despite their favourable living conditions, and hence were always dominated by those from abroad, due to their weakness in character, a weakness which was compensated by their capacity to learn from their invaders and to organize themselves around cities, the best form of social organization to exploit natural resources (Strab. 3.4.5; 13). Barbarism or civilization always varied in the light of different cultural values. The hospitality of southern and Mediterranean communities towards invading forces was seen in a positive light given the cultural development that these communities enjoyed because of it; on the other hand, warrior culture was not negative either, once it served Rome (Strab. 3.3.8).

Strabo's ethnography is historical and cultural, judging each group for their personality, their capacity of learning from other cultures, their ability to unite and articulate around larger and stronger groups, or to transform their talents into virtues.

Despite Strabo's historical and cultural theories, applied to the evolution of communities and their territories, and despite his rhetoric of the other, there is still much information that may be filtered on historical processes that are not found in other documents, particularly processes of ethnic articulation, taking place with or without Rome's impulse, which are, on the other hand, reflected in other types of evidence. For example, the term ‘Celtiberian’ clearly refers to the union of two ethnic groups, coined by foreigners in an attempt to understand and simplify a reality, which was more complex. Nevertheless it may be inferred from Strabo's lines that contemporary literature recognized in that term certain phenomena of social integration and expansion. Although Strabo only acknowledged these transformations from a military point of view, Celtiberian warfare and social cohesion both posed threats to Rome's interests, subsequently leading to the bloody Numantine War. Once the military threat

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48 Strabo rejected any notion that the Celtiberians had developed urban ways of life prior to Rome's arrival, as Polybius and Posidonius suggested (Strab. 3.4.13).

49 This is what lies behind the statement "they caused the whole neighbouring country to have the same name as their own" (Strab. 3.2.11) or the polemic on the parts (mere) which constitute the historical region of Celtiberia (Strab. 3.4.13 and 19).
disappeared, Rome found the term useful to include these territories as part of the Province, a broad and imprecise administrative framework.\(^{50}\)

The dynamic nature of ethnicity is widely accepted in current research as one of the key factors in the transition from pre-Roman to Roman in the Iberian Peninsula. Strabo observed this for southern Iberia. Not only did he rhetorically consider the region as an ideal land for the development of civilization, it may also be gauged from a closer read that he presented the Guadalquivir region as a place of interaction between cultures.\(^{51}\) The Phoenicians and Punics were the seed for the ancient civilization of Tartessus, which later developed into a very varied mixture of peoples, who built their identities around their cities and *ethnos* (Strab. 3.2.14).\(^{52}\) In sum, this interpretation of Strabo is not so far from historical reality. This perspective also explains why the geographer decided to downplay Rome’s intervention in the region, which was necessary but not complete. Strabo’s work was not a reflection of romanization, as many scholars have interpreted it, but a geography of the historical conformation of Iberia’s communities, which is the central theme of Book 3.\(^{53}\)

There are many examples that illustrate the potential of Strabo’s work to transcend the literary sphere as a historical and historiographical source. Firstly, he drew on varied and heterogeneous geographical and historiographical sources, which joined with a historical perspective of geographical space, resulted in a rich, encyclopaedic narration, full of nuances. It is both descriptive and analytical at the same time. It may not be as rigorous as Polybian geography, but it is certainly much closer to the reality of Braudel’s *longue durée*, the importance of which was clearly perceived by Strabo and recognized by his contemporaries, despite his inclination towards stereotypes concerning the civilization of communities recently conquered by Rome.

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50 Beltrán Lloris 2004; Ciprés Torres 1993; 2006.
51 Cruz Andreotti 2009; 2011.
52 The description of Gades as an ‘ideal city’ united foundational myths, their own historical and literary traditions and Roman political and socio-economic organization (up to 500 individuals among its population were counted as belonging to the equestrian *ordo*). It was presented as a paradigm of Mediterranean civilization, initiated by the Phoenicians (in Strab. 3.5.3–10). Cruz Andreotti 1994, sp. 71 ss.
53 Cruz Andreotti 2009b; 2014 (forthcoming).
5 Epilogue: The Consolidation of an Administrative Perspective of Geography

It is common to speak of Roman pragmatism versus Greek speculation as a way of explaining changes in geographical perspective. The Greeks themselves contributed to disseminating this interpretation. However it was not so much a problem of mentality as a change in political and cultural context. Hellenistic thought interpreted the world as a mixture of cultures and societies that shared common elements and differences, a world with no hegemonic power, which needed to be understood in all its diversity. The development of geography was a result of such a context.

Although Rome did inherit the drive to ‘civilize’, it transformed the world in its wake, so that geography became a reflection of the present, not the past. Communities acquired legal status and space became territory. Historical culture lost importance in the light of descriptive geography. Periplus models, which favoured the accumulation of knowledge, substituted cartographic models, where form was more important than detail. A more empirical approach, rather than a speculative one, was applied to describe space.\(^{54}\)

Strabo resisted these changes, as if sheltered by a clearly superior culture (Strab. 3. 4.19), only making a brief mention in his concluding paragraphs to contemporary administration (provincial divisions, legal status of the main cities, government models…) after having described each ‘geographic unit’. Pliny, on the other hand, adopted a more encyclopaedic approach. Although he was not a stranger to the advances in cartography, his work cannot be considered a geographical description; in fact, he does not even reference Strabo. It is a catalogue of conuentus and ciuitates, following an administrative and periplus order, in which ethnic groups and other cultural considerations (the origins of communities, traditions, etc…), were considered of secondary importance, with the significant exception of Gades. Although Pliny combined well-known geographical criteria (coastlines, rivers, ethnic groups, and local resources) to organize and classify information, administrative data predominates throughout his work, which he probably extracted from lists of towns used for collecting taxes in the provinces and conuentus. However the weight of tradition still persisted. He gave Hispania shape and extension, and on top of this form, he superimposed a descriptive model—lists of cities and towns—that could be characterized as antithetic, because it lacked geographical projection.\(^{55}\) Baetica is a paradigmatic example. For the geographical outline

\(^{54}\) Arnaud 2007; Recently: Haushalter 2013 (forthcoming).

\(^{55}\) Beltrán Lloris 2007.
of the coastline and the Betis river, Pliny respected tradition—although with no mention to longitude, latitude or any kind of grid (Plin., *HN* 3.7–10). For the interior of the region, he adjusted his enumeration of towns to the administrative division between the *conuentus* of Hispalis and the *conuentus* of Corduba and Astigis (Plin., *HN* 3.10–12), even though such an adjustment did not exactly correspond to ethnic divisions between the Celtic and Turduli of Baeturia or the Bastetanian. He also neglected to mention any significant geographical feature that could be used as a physical reference in space. Either the geographical reference was very clear or Pliny handled two very different kinds of sources, at some points at least.56

Interestingly, Pliny favoured the name ‘Turduli’ over ‘Turdetani’, perhaps indicating a predominance of the former over the latter, which was actually just a loose ethnic denomination used as an agglutinative (Plin., *HN* 3.13).57 The importance of previous indigenous ethnic groups in the new Roman territories is still a matter to be determined, although it appears that they played a secondary role, at least in terms of ascribing towns to their *conuentus*. From a Roman perspective, ethnic groups may have been used as an instrument of transition between the military domination of the Republican period and ‘civil’ imperial administration in times of Augustus.58 This could explain certain inconsistencies in Pliny’s work, although it could also be due to the use of very different sources. Pliny presumably served as a model for Varro and Agrippa. Mela also followed him, although to a lesser degree, since his work was not as scientific, resembling a simplified—and outdated—guide, which only outlined the coastline and capes with very few references to inland towns.59

In sum, contemporary history (whether interpreted in terms of ethnic groups or administrative units) clearly imposed itself over cultural geographies, and particularly over the more scientific geography, which focused on maps and geographical features.60

Ptolemy was the last representative of this approach. Scientific geography and descriptive geography contributed to the development of each other; both searched for a homogenous and harmonious perspective of the *oikoumene*, whether in its cartographic shape and extension or in its cultural characterization. Ptolemy followed in the wake of Eudoxus, Pytheas and Eratosthenes and attempted to include in one same scientific design all data collected on Iberia

57 Untermann 2004.
58 Le Roux 2006, sp. 65 ss.
60 Gómez Fraile 2002; Parroni 1993; Prontera 1992b; Traina 2007.
since the third century BC. There were errors in location, which resulted from trying to accommodate information originating from periplus sources into an orthogonal grid that fit the regional map. It was the last serious attempt at proposing a complete, coherent map for the known world, in relation to continental and maritime surfaces (an idea, which had persisted in the mind of geographers from the very beginning). Nevertheless the Roman perspective, as portrayed by Pliny, sacrificed this first goal in pursuit of a new one, the *Tabula Peutingeriana*, which listed as many known roads, cities, ports, *mansiones*, etc. as possible, all disposed in a linear arrangement that lacked real form. The search for a harmonious and simplified presentation of reality in the form of a map had been abandoned. New times united geography and empire in a same political project, which demanded descriptions of geographical space full of useful administrative data that would reflect Rome’s dominion over the world. Cultural geography united descriptions of ways of life with cartographic data. The way the world was represented during the empire also used as much data as possible, but aimed at reflecting imperial greatness, rather than understanding geography and pondering on different ways of life and their location in space.

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61 Bianchetti 2008a, sp. 49–52; Marcotte 2007.  
62 Prontera 2003b.
CHAPTER 17

The Geographies of Pliny and his ‘Ape’ Solinus

Kai Brodersen

equidem beatos puto, quibus deorum munere datum est aut facere scribenda aut scribere legenda, beatissimos vero quibus utrumque. (“I for one regard those as blessed, to whom, by favour of the gods, it has been granted either to do what is worth writing of, or to write what is worth reading, and as most blessed those on whom both gifts have been conferred”).

Plin., Ep. 6.16.3

Such praise, the second part of which resonates with authors (and companion editors!) even today, was lavished by Pliny the Younger in a letter to the historian Tacitus about the writer’s uncle, Pliny the Elder. Indeed, he had been among those “most blessed”, as an officer and as a prolific writer. He is credited with a book De iaculatione equestri (“On the use of missiles on horseback”), 2 books De vita Pomponi Secundi (“The Life of Pomponius Secundus”), 20 books on Bella Germaniae (“Wars in Germany”), 3 intitled Studiosus (“The Student”), 8 on Dubius Sermo (“Unclear Use of Language”), no less than 31 on history A fine Aufidii Bassi (“From the end [of the Histories] by Aufidius Bassus”), and 37 books on Naturalis Historia, a an encyclopedic work presenting a huge store of knowledge, and probably written in the 70s AD.

Pliny the Elder himself, however, seems to have approved of a more modest outlook. In his the 7th of the 37 books on Naturalis Historia, he presents examples of good fortune (felicitas), singling out Augustus, quem universa mortalitas in hac censura nuncupet (“whom all mankind nominates under that group”, HN 7.147)—after all, Augustus surely did do what is worth writing of—, only to then survey his many misfortunes, and to contrast such vanitas with two men which the oracle of Delphi regarded as felicissimi (NH 7.151):

Subeunt in hac reputatione Delphica oracula velut ad castigandam hominum vanitatem ab deo emissa. duo sunt haec: Pedium felicissimum, qui pro patria proxime occubuisset; iterum a Gyge rege tunc amplissimo terrarum consulti: Aglaum Psophidium esse feliciorem. senior hic in angustissimo Arcadiae angulo parvum, sed annuis victibus large sufficiens praedium colebat, numquam ex eo egressus atque, ut e vitae genere manifestum est,
minima cupidine minimum in vita mali expertus. (“In this context two Delphic oracles come to mind which were uttered by the god as if to chastise the vanity of mankind. The two are these: “Pedius was the happiest, who lately fell for his fatherland”, and, when the oracle was consulted by Gyges, who was then the wealthiest king in the world: “Aglaus of Psophis is happier.” He was an elderly man who in a very narrow corner of Arcadia, cultivated a small plot of land, which was small, but largely sufficient for his yearly supplies, and who had never gone outside it and—as is apparent from his kind of life—was a man of minimal desires who experienced a minimal amount of misfortune in life”).

So real felicitas, in Pliny’s eyes, rests with Pedius who died fighting for his country, and with Aglaus, who lived a self-contained life, staying at home as a farmer producing just enough for his own subsistence—anything beyond that is vanitas!

If Pliny really shared this sentiment he might not have been too disappointed that later generations did not regard most of his works as ‘worth reading’ any more. The first 65 books referred to above—from De iaculatione equestri to, and including A fine Aufidii Bassi—were lost save for very few fragments, and even the 37 books of the Historia naturalis, which did survive, “do not sit comfortably under one cover” and have a complicated history of textual transmission in the middle ages. Even the “star performer” among the early witnesses, the Codex Moneus, preserves “large stretches” of only five books, HN 11–15, while the other important early manuscript, the Codex Salmasianus contains only excerpts from HN 19–20.

Other excerpts were transmitted independently of the HN, they include the anonymous Medicina Plinii, which may date to the time around AD 300 and contains more than 1100 pharmacological recipes, the vast majority of which is taken from the HN, and the Collectanea rerum mirabilium or Polyhistor by a certain Gaius Iulius Solinus, with three quarters of the material based on

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1 Cf. Val. Max., 7.1.2 (is erat Arcadum pauperrimus, sed aetate iam senior terminos agelli sui numquam exessererat, parvuli ruris fructibus contentus) and Paus., 8.24.13, who links Aglaus with Croesus of Lydia, and adds: “It was stated that the whole of his life was happy, but I could not believe it”.
4 Önnerfors 1964, xxi; Brodersen 2015.
5 Mommsen 1895; Brodersen 2014a.
the *HN*. In the context of this companion the latter work is of interest, as a compact guide to the geography and the wonders of the world, which achieved “almost unrivalled popularity in the Middle Ages”.6 Indeed, Solinus “remained the chief Latin geographer to a millennium”.7

“As we still have Solinus’ sources today, the *Collectanea* are materially irrelevant for us”.8 Statements like this, published in *Pauly-Wissowa*, are typical for the low esteem in which Solinus has been held in classical scholarship. He has been called a “mentally retarded compilator”,9 the great Theodor Mommsen referred to the “ridiculous errors of that little teacher” (*ridiculi magistelli errores*);10 unsurprisingly, the “wretched” and “trivial work”11 has often been castigated, and more often neglected12—in spite of its massive influence for a millennium. The present contribution was commissioned to question this neglect.

1 **Pliny’s Geography**

In the four geographical books, *HN* 3–4, Pliny organizes the material in a strict periplus. His description follows the coastlines of the world, first along the “inside”, then the “outside”, as he himself sums up at the end of his periplus (*abunde orbe terrae extra intra indicato, HN* 6.205).13

Pliny starts “inside”, at the Straits of Gades, follows the coastline of Spain from *Baetica* and *Hispania citerior* (3.7–30) via Gaul (*Narbonnensis*, 3.31–37) to the coast of Italy until Locris (3.38–75); he then stops to list the islands in the “first sinus” of the sea (3.76–94). Taking up the periplus again, Pliny follows the coastline of Italy from Locris along the Ionian Sea to Ravenna (3.95–122), but interrupts it for a description of the interior beyond the Po river (3.123–128) via *Histria*, the Alps, Illyricum, Liburnia, Dalmatia, Noricum, Pannonia up to Moesia (3.128–150), and for a survey of the islands in this “second sinus” of the sea (3.151–152). Again in strict periplus mode, Pliny then follows the coastline from Epirus and Achaia (4.1–22) to Greece (4.23–28) and onwards to Thessaly,
Magnesia, Macedonia, and Thrace to the Hellespont, the “third sinus” of Europe (4.29–51); the islands in it are again presented separately (4.52–74). Finally, the “fourth sinus” is described as a periplus from the Hellespont via the Propontis and the Bosporus to the Pontus (Black Sea) and onwards to the Maeotis (Sea of Azov) beyond it (4.75–79). The interior from Dacia to Scythia (4.80–91), and the islands (4.92–93) are again listed separately.

Next, Pliny follows Europe’s “outside” oceanic coastline from the north to Germany and the ‘Gallic Ocean’ (Belgica, Lugdunensis, Aquitania, 4.94–101) and, separately, the islands therein (4.102–104); he then follows the oceanic coastlines of Gaul (4.105–109) and Spain (Hispania Citerior, Lusitania) up to the Straits (4.110–118); again the islands in mari Atlantico are listed separately (4.119–120). A brief passage on the measurements of Europe ends book 4.

Pliny begins his description of Africa, like the one of Europe, at the Straits, and first describes the “inner” coastline from Mauretania to Cyrenaica (5.1–40), followed by brief passages on the islands (5.41–42) and the interior (5.43–46). Egypt is given a coherent description, followed by the coastline from the “inner” coasts of Arabia to Syria (5.47–64), while the interior is described along the Euphrates river (5.83–90). Returning to the coastline, the periplus then runs from Cilicia to the Troad (5.91–127), with a separate passage on the islands there (5.128–140), and continues from the Hellespont along the coast to Bithynia (5.141–150), interrupted by a paragraph on the islands (5.151), and along the Pontus coast up to the Maeotis and Armenia (6.1–25); again, the interior is described along the line of rivers, the Cyrus, and the Araxes (6.26–28), and expanded to the Caucasian gates (6.29–31); a description of the islands closes this part of the periplus (6.32). Finally, Pliny follows the “outside”, from the Scythians to the Eastern ocean (6.33–52) and beyond along the Seres, India, Taprobane, and Ariane (6.53–95), with an excursus on the sea route to India (6.96–106), finishing the periplus from Parthia via Mesopotamia (along the Tigris river), Arabia, the Red Sea to Aethiopia (6.107–198); again the islands (6.198–201), and especially the Isles of the Blessed (6.202–205a), are dealt with separately. An appendix (6.205b-220) presents unam Graecae inventionis scientiam (“a science of Greek thinking”) on theoretical aspects of geography.

Pliny’s linear (periplus) mode of organizing the material along coastlines and rivers has consequences: Several regions are described twice, depending on which coastline is followed: This is true for Spain (3.7–30; 4.110–118) and Gaul (3.31–37; 4.105–109), but also for Mesopotamia (5.83–90; 6.25–28), and even the Hellespont (4.49; 5.141–144). To be sure, a readership unfamiliar with maps14 will not have seen this as imperfections, but it is clear that the linear

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mode was—as Pomponius Mela, whose short geographical work dating to AD 43/44\textsuperscript{15} predates Pliny’s, and was indeed used by him—put it (1.1):\textsuperscript{16}

\begin{quote}
impeditum opus et facundiae \textit{\textit{minime capax}}—constat enim \textit{\textit{enim fere gentium locorumque nominibus et eorum perplexo satis ordine, quem persequi longa est magis quam benigna materia}} (“a difficult task and one hardly suited to eloquence, since it consists chiefly in names of peoples and places and in their fairly puzzling arrangement. To trace this arrangement completely is a time-consuming, rather than a welcome subject...”).
\end{quote}

Little wonder then that Pliny’s work eventually lost its status as “worth reading”—while Solinus’ \textit{Collectanea} which embellished the geographical data with \textit{res mirabiles} enjoyed a huge popularity.

\section{Solinus’ Work}

Solinus’ work\textsuperscript{17} survives in two versions. The first is presented, in a dedicatory letter addressed to a certain Adventus, as a \textit{liber ad conpendium praeparatus}

\textsuperscript{15} Brodersen 1994, 1–2. Pomponius Mela states that he will line up the coastlines in the order they lie, and that he, “having wandered through everything which touches that sea, will collect/read (\textit{\textit{legere}}) that which the ocean encircles, until the course of the work after a journey around the inside and the outside of the world’s circle returns to the starting point” (1.24). Consequently, Pomponius Mela sets out his \textit{periplus} (\textit{\textit{circumvectio}}) from his native Spain at the Straits of Gades, following the coastline of Africa (1.25–48), then that of Egypt via Asia to the Bosporus and beyond to the Pontus (Black Sea) and the Maeotis (Sea of Azov) to the mouth of the Tanais, the river Don (1.49–117). From here he returns to the Pontus via the Bosporus to Thrace, Greece, and Italy (2.1–73), Gaul (2.74–84), and Spain to the Straits (2.85–96); a separate description is then given for the islands from the Maeotis to the Spanish islands (2.97–126). So much for the \textit{\textit{intra}} part of the \textit{periplus}; the one \textit{\textit{extra}} follows the oceanic coastline from the Straits (3.1–2) along Spain (3.1–15), Gaul (3.16–24), further Europe (3.25–45) and, again in a separate section, of the relevant islands (3.46–58); thence along Asia (3.59–84) and finally Africa (3.85–107), ending again at the Straits. Because of presenting space as a \textit{\textit{circumvectio}}, Pomponius Mela deals with Bithynia (1.97) and Thrace (2.16) in widely separate parts of his work, and divides up the descriptions of Spain (2.85–96 and 3.1–15) as well as Gaul (2.74–78 and 3.16–24), depending on whether he describes the lands \textit{\textit{intra}} or \textit{\textit{extra}}.

\textsuperscript{16} Transl. Romer 1998, 33.

\textsuperscript{17} The following text develops the arguments set out in Brodersen 2011 (as shorter German version of this is Brodersen 2013) to which the reader is referred for detailed argument and documentation.
dealing with “geographical features in their proper order, and adding some information on exotic trees, the looks and rites of distant peoples, and other memorable things”. The second version, with another dedicatory letter, claims to be a revision by Solinus himself which justifies the new title Polyhistor, “know-it-all”… In both versions Solinus fulfilis his programme as set out in the dedicatory letter of the first version; among the “memorable things” he focuses on precious stones. There is no other evidence for the author than the work itself. As for a terminus post quem of the work, the last Roman emperor mentioned (at 29.3) is Vespasianus (imp. AD 69–79); we cannot safely identify the Adventus, to whom the dedicatory letters are addressed. The first reliable termini ante quos for Solinus’ work are the quotations in the works of Ammianus Marcellinus (AD 325/330–after 391)18 and his contemporary Maurus (or Marius) Servius Honoratius.19 It has been shown20 that Solinus uses 140 words (out of Solinus’ total vocabulary of ca. 4550) which are “new”, and that many more are used in new or previously unusual meanings.21 Depending on whether one assumes Solinus to be a linguistically innovative author or an unoriginal compiler, one dates the first version of his work to the (later) 3rd century22 or the 4th century.23 While the linguistic argument may remain inconclusive, the content may increase the probability of a 3rd century date: Solinus’ survey of the history of the calendar (1.34–47) has a close parallel in Censorinus’ De die natali 19–22 which is securely dated to AD 238,24 and Solinus’ remark (not taken from his primary source) that not only women but also men are “now” wearing silk robes (L 3), can be linked to stories about this innovation being introduced under the Emperor Elagabalus (imp. AD 218–22).25 It is also remarkable that while Rome is celebrated in a very long chapter, none of the Roman Empire’s provinces features as prominently as one might expect in a 4th century work, neither do Antioch on the Orontes as the seat of the praefectus of the dioecesis orientis formed in the 290s AD, or indeed Constantinople, consecrated in AD 330.26 To be sure, none of these features individually (nor the lack of clear

21 Brodersen 2011, 84–86, comments on the innovative use of Mediterraneus and Oriens in Solinus.
22 Hyskell 1925; Walter 1963; 1969.
23 Schmidt 1995, 32–33.
26 Solinus only fleetingly refers to Byzantium at 1.79 and 10.17 and does not use the name Constantinopolis.
references to Christianity) can be used to date Solinus’ work, the cumulative evidence may point to the later 3rd century for at least the first version.27

Solinus’ work was to become a very popular compendium in late antiquity and the middle ages. It was used by St. Augustine and by Marcianus Capella in the 5th century, by Priscianus to embellish his translation of Dionysius’ *Periegesis*, and by St. Isidore for his encyclopaedic *Etymologiae*. In the 6th and 7th centuries, St. Aldhelmus and the Venerable Bede are amongst the users of Solinus’ work.28 All these quotations antedate the earliest surviving manuscripts. More than 250 codices transmit Solinus’ work29 and are an impressive testimony to the relevance attributed to it for more than a millennium. The earliest printed editions of Solinus date to the 15th century, and all the earliest translations into modern languages to the 16th: with few exceptions they remained the last. There is no modern translation into English, French or Italian.30 The latest, and lasting, critical edition by Theodor Mommsen (1817–1903) is based on studies begun by Karl Ludwig Roth (1811–1860) and Gustav Parthey (1798–1872), on his own readings of three original manuscripts (which were sent to his private house in Berlin), and on collations of many others by his extensive network of disciples. In spite of the low esteem in which Mommsen held Solinus, he produced two editions; his “act of self-denial”31 has not since been repeated and would require a collaborative project, and an innovative way of presenting the text in a way which departs from the reconstruction of an “Urtext”32 and presents the various versions with their additions as a “living” text—note that one of these additions presents the earliest text in Latin on the geography of Norway.33

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27 The new *Handbuch der lateinischen Literatur der Antike* had originally assigned a date between AD 117 and AD 284 to Solinus (he was to be §409 according to Herzog 1989, 556) but has since moved him to between AD 374 and AD 430 (he is now §603 according to Sallmann 1997, 649; the relevant volume, however, is still awaiting publication).
28 Cf. the lists in Mommsen 18952, 243–49.
29 Brodersen 2014b, 201–208, lists more than 250 manuscripts with the complete, excerpted, or fragmentary text, and several collations, epitomes, etc.
31 Weyman 1896, 911.
33 Mommsen 18952, 236; Brodersen 2014a, 328–329.
Solinus’ Sources

Solinus refers to 68 different authors as sources for the information he gives, surely mostly at second hand. Two geographers, however, are not mentioned, but have long been recognized as Solinus’ main sources: Pomponius Mela (see above), and Pliny’s *HN*. In 1627, the Dutch scholar Gerardus Johannes Vossius (Gerrit Janszoon Vos, 1577–1649) stated that Solinus “has copied so much from Pliny that he deserved to be called Pliny’s ape”. This mocking description soon found its way into early general encyclopaedias, and stuck with the author.

To be sure, Solinus makes extensive use of Pliny’s geographical books (3–6), condensing the material: Pliny’s four books alone are some 40,000 words, while Solinus’ work has only some 33,000 words altogether—and then Solinus gives extensive information taken from Pliny’s other books, on mankind (7) and animals (8–11), on plants (12–13), and on precious stones (37); occasional use is made of the books on cosmology (2), trees (16), garden plants (19), flowers (21), other plants (22), herbs (25), as well as on the medicinal use of human (28), animal (30), and marine products (31) and marine animals (32), on metal (33), and on earth (35). By abbreviating the material Solinus created a work which copyists, and readers, could handle more easily than the unwieldy mass of Pliny’s *Naturalis historia*. The wide distribution of, and the many quotations from the work, spanning more than a millennium, are testimony to Solinus’ success in this respect.

So about three quarters are based on Pliny the Elder—what about the other quarter? We have already seen that he used Pomponius Mela, but where did the other material come from? In the spirit of 19th century German *Quellenforschung*, Theodor Mommsen argued that Solinus’ work was based on a lost source, which he referred to as *Chorographia Pliniana*, and considered to be compiled from Pomponius Mela, Pliny the Elder, and some *Ignoti*. Solinus’ main achievement, according to Mommsen, was that copying the *Chorographia Pliniana*, and thus ensuring its survival. In the same vein, though with a different assumption, Gaetano Mario Columba argued that Solinus’ ultimate source, via a “compilatore soliniano” and his source, a “corografia ignota” (also used by Pliny), was a *Geographia Varro-Sallustiana* (also used by Pomponius Mela). However, Hermann Walter has put forward the less complicated

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34 Cf. the list in Mommsen 1895², 237.
35 Vossius 1627, 726.
36 Hofmann 1698, 216; Zedler 1847, 586.
37 Mommsen 1895², xv.
view that the compilation and both the first and the second editions are Solinus' own work.\textsuperscript{39} As Walter's thesis is compatible with the evidence, and more economical, we may assume that the 3rd century scholar Solinus was indeed the compiler, and produced at least the first, if not both versions, of the \textit{Collectanea}.

4 Solinus' Innovations in Presenting Space

Is there more to Solinus than “Pliny’s ape”? I have recently argued elsewhere,\textsuperscript{40} and will not repeat the detailed argument here, that Solinus was, in fact, an innovator by adding information on neighbours which his source did not present, and by adding references to cardinal points: Solinus repeats the information given by Pliny, but adds directions for Italy (\textit{meridiem versus}), for Sicily’s Cape Pachynus (\textit{in meridianam plagam}) and Cape Peloria (\textit{adversa vespero}), for Bithynia (\textit{ad partem solis orientis}), and Carmania (\textit{occasui obiacet}). To be sure, we today are familiar enough with maps to know that the Danube is indeed north of Thrace, the Pontus and Propontis east of it, and the Aegean Sea south of it, that Bithynia is indeed east of Thrace, and also that Carmania has a west coast, i.e. stretches (unlike the present province of Kerman) as far as the Persian Gulf; however, we are also aware of the fact that Italy does not extend straight south, that Greece is not south, and Italy not west of Sicily. So where Solinus adds something to what he has found in his source, he does not have a periplus in mind in which directions do not matter, because they are given by the coastline followed, but rather seems to envisage areas including their directions, referring to south, west, north, and east. Also, Solinus makes extensive use of the concept of \textit{plaga}, as an area not on the ground, but in the sky: unlike in Pliny, for Solinus the \textit{plagae caelestes} or \textit{plagae caeli} make an substantion conbtribution to localizing the terrestrial areas which Solinus describes.

What the present contributions will try to focus on is the innovative way of presenting geographical data. Unlike Pomponius Mela (1.1–24) and Pliny (\textit{HN} 6.205b–220), Solinus does not present a summary of scientific geography. Rather, after a long introduction on Rome and the human race (1) he states (2.1):

\begin{footnotesize}
\begin{itemize}
\item[40] Brodersen 2011; 2013; 2015b (on the term “barbarus”).
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De homine satis dictum habeo. Nunc, ut ad destinatum revertamur, ad locorum commemorationem stilus dirigendus est atque adeo principaliter in Italiam, cuius decus iam in urbe contigimus. (“About mankind I have said enough. Now, so that we return to our plan, the pen is to be directed towards remembering places, and first and foremost to Italy whose beauty we have already touched upon in the passage about the urbs [Roma”).

In what follows, Solinus adapts Pliny’s periplus, and the idea of four sinus Europae, but as Solinus does not begin with the Straits of Gades, but with Italy (2), this approach does not work well. While later the sinus tertius (7.1) and sinus quartus (12.1) can be fitted into Solinus’ scheme, the mention of an Aegeus sinus (11.1), but especially the awkward reference to the sinus primus and secundus (2.24) within the description of Italy are incompatible with a periplus. In fact, Solinus breaks the idea of a periplus at the end of his description of Italy, when he writes (2.51–52):

Italicus excursus per Liburnos, quae gens Asiatica est, procedit in Dalmatiae pedem. . . . At ex altera parte per Ligurum oram in Narbonensem provinciam pergit. (“The way out of Italy is through the Liburnians, who are an Asiatic tribe, and proceeds towards the foot of Dalmati . . . But on the other side it continues along the coastline of the Ligurians to the Narbonensis province”).

Both excursus of Italy, one towards Dalmatia, the other towards Narbonensis, are described here, and the periplus mode is ignored when the connection to Narbonensis is given not as part of a linear voyage along a coastline, but as a neighbour towards a side which this voyage has not touched as yet, and does not touch now: Solinus’ description of Italy is not in the linear mode of his source, but looks at an area which has neighbours on either side (also ex altera parte).

After the mainland of Italy, Solinus next describes the islands in the immediate western vicinity of Italy (Corsica, Sardinia, Sicily, etc.; 3–6)—but not, as Pliny does, all of the islands in the first sinus. The tertius sinus is then described from the Molossi via the Peloponnesus, Greece, Thessaly and Macedonia to Thrace and the Hellespontus (7–10), followed not by the quartus sinus, but by the Aegeus sinus (11.1–2, not mentioned as such by Pliny) and its islands (11). Only then the quartus sinus is addressed (12), but again interrupted by a description of the lands along the Hister (Danube; 13), and the Scythians (14–15) and the people beyond the Scythi (16–17), eventually discussing the Pontus as the origin of the Mediterranean (18), and an island in the Pontus (19.1).
Solinus then continues his description along the *oceanus septemtrionalis* (19.2–5) and its islands (19.6–19), followed by Germany (20), *all* of Gaul (21), and Britain (22). *Reversos ad continentem* (23.1) Solinus describes *all* of Spain, including the Balearic islands (23), even though they are not in the outside ocean (and thus would not part of the periplus). The coastal periplus stops here, as the lands bordering on the Mediterranean between the Straits and Italy, i.e. Spain and Gaul, had already been covered from the oceanic side, ignoring Pliny's traditional *circumvectio*.

Instead, Solinus presents *de Hispania excursus in Libyam* (26.1), from the Atlas mountains via Mauretania (24–26), Numidia (26), and *omnis Africa* (27), the Syrtes and beyond (28–29), ending with the island of Gauloe (29.8). An inland route then is used to describe Aethiopia (30), the deserts (31), and Egypt (32). The description is then continued via Arabia (which Solinus, unlike Pliny, describes from the Mediterranean coast, 33), the Mediterranean coast from Cassius to Cassius (34–36), Mesopotamia (37), and Cilicia (38), followed by Lycia (39), Asia minor up to Galatia and the Pontic coast (40–45), and then Assyria, Caspia, and and Bactria (46–49).

Finally, Solinus explores the Eastern and Southern Ocean from the *Serae* to the Indi (50–52), and the island of Taprobane (53), and finally the Southern and Atlantic Ocean, from Carmanica via Persis to Parthia (54–55). At the end of his description, the auctorial remark *tempus est ad Oceani oras reverti represso in Aethiopiam stilo* (“it is time to return to the oceanic coasts, having pressed the stylus towards Aethiopia”, 56.4) introduces the final lap, ending the work with the Gorgades and Hesperides islands, including the Islands of the Blessed (*Fortunatae*, 56.4–19).

So, unlike Pomponius Mela and Pliny, does not present a pure periplus, a linear description of space, and thus has no need to split up the descriptions of Gaul (21), Spain (23), and Mesopotamia (37), and no need to divide the description of the Hellespontus into the two sides (10.21). Pomponius Mela’s and Pliny’s *linear* mode of description has been replaced by a look at *areas*.

So what is Solinus’ achievement? First, he has successfully condensed the material found in his main source, the unwieldy *Naturalis historia* of Pliny the Elder, to a manageable size, creating a work which copyists, and readers, could more easily handle. The wide distribution of, and the many quotations from, the work, spanning more than a millennium, are testimony to Solinus’ success in this respect. Second, while both Pomponius Mela and Pliny the Elder presented the geography of the world in their texts as a linear periplus along the inside and the outside (*intra extraque*) coastlines, and thus had to divide the description of areas which have coastlines on the seas both “inside” and “outside” (Spain, Gaul) into two separate passages, Solinus uses a different
mode of description: At first sight he appears to adhere to a periplus as the basic method to organize the material, but a close comparison of his descriptions with the ones he has found in his main sources has shown Solinus to be an innovative geographer: he is adding neighbours and cardinal points and by emphasizing the concept of *plaga*, but most substantially by giving up the strict rules of the periplus.

How can we explain these innovations? It looks as if the periplus model, which Pomponius Mela and Pliny the Elder used intensively, and which entailed that several regions were described twice, depending on which coastline was followed; thus Spain, Gaul, Mesopotamia, or the Hellespont were not presented as units. In contrast to that, Solinus enables his readers to envisage a map, with cardinal points, relative positions of areas to each other, and *plagae* as descriptions of large areas. To be sure, on such a map, Italy runs straight from North to South (Solin. 2.19), Sicily has capes to the north of the Peloponnese and to the east of Italy (Solin. 5.2), and Crete is located between Greece and Cyrene (Solin. 11.4). The map marks the *Aegeus sinus* (11.1–2) and the *Creticus sinus* (27.1–2); it also marks the northern, western and southern *plaga*, the *Mediterraneus* and the *Oriens*. It is perhaps no coincidence that the first undisputed reference to a map on display only dates to AD 297,41 and that the date Richard Talbert has recently suggested for the “original” of the *Tabula Peutingeriana*, is ca. AD 30042—as we have seen above this is also the probable date of Solinus’ *Collectanea rerum mirabilium*.

While we can only guess what kind of map Solinus or his readers may have envisaged, we have solid evidence that Solinus inspired later readers to introduce not only illustrations into the work the 11th century *Codex London, BL Egerton 818*, for instance, shows, on fol. 2r, Solinus himself, resenting his work to Adventus),43 but also maps.44 Indeed, David Ross has argued from later medieval evidence that “there appears to have been a cycle of illustrations for Solinus dating back to late antiquity” which survives “in a medievalized” form in several codices.45 While postulating a late antique cycle of illustrations

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42 Talbert 2010, 136.
43 This codex was not used by Mommsen 18952; cf. Bell 1929; Ross 1963, 78–79, 104 n. 417; Milham 1983; Munk Olsen 1985, 499–500 (C. 37).
44 Cf. the map in the 13th century *Codex Ambrosianus C 246 inf.*, discussed by Revelli 1927; Levi 1974; Cogliati Arano 1979.
45 Ross (1963, 78) argues that the “medievalized” form is detectable in the *Codex Ambrosianus C 246 inf.*, while “some traces” may be present in the *Codex London, BL Egerton 818* and its descendant *Codex Vaticanus lat. 3342*. 
from much later “copies” carries methodical risks, it is in any case clear that later users of Solinus were inspired by his text to draw maps. It is surely no coincidence that in the 13th century Christian *Mappamundi* from Hereford more of the “Map’s textual content can demonstrably be attributed to Solinus, who was almost certainly not a Christian, than to any other source (Isidore of Seville his only rival), particularly in Asia, Africa, and the Mediterranean Sea”.

Ultimately, then, a close study of Solinus’ geography can show how the book which made Pliny’s geography accessible through a *text*, and which achieved almost unrivalled popularity in the Middle Ages and the Early Modern period, may also be connected with the idea of presenting space in a *map*, although, of course, it did *not* use this kind of presentation itself, but presented, in a *compendium* many interesting “geographical features in their proper order, and adding some information on exotic trees, the looks and rites of distant peoples, and other memorable things”.

So it is rather poignant that Solinus includes a story taken from a different context in Pliny (*HN* 7.51, quoted above), and focused on geographical thinking, precisely at the juncture between his presentation of Rome and Mankind (in chapter 1) to his geographical chapters (2–55) which may have resonated with late antique and medieval readers (1.127):

>certe beatum cortina Aglaus iudicavit, qui in angustissimo Arcadiae angulo pauperis soli dominus numquam egressus paterni cespitis terminos invenitur. (“The Tripod [i.e. the Oracle of Delphi] judged Aglaus as surely happy, who lived in the narrowest corner of Arcadia, as a master of a poor soil, and was found as someone who never left the *termini* of his paternal plot of land”).

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46 Westrem 2001, xxx.

47 Note that Solinus does not mention Gyges, “who was then the wealthiest king in the world”, Psophis, the fact that the land “was largely sufficient for his yearly supplies”, the description of Aglaus as “a man of minimal desires who experienced a minimal amount of misfortune in life”—but adds the geographical term *termini*. 

D. Cartographical Science in Alexandria
At the end of the 2nd century of our era, the Geographike Hyphegesis (more commonly called Geography) composed by Ptolemy in Alexandria, appeared as the final and decisive step in the development of the science called Geography by Eratosthenes, some five centuries earlier. Collecting the latest improvements in the knowledge of the inhabited world, it aimed not only at inscribing them on a map, but also at offering anyone the means of drawing a map of the world or maps of any country of his choice. In his major astronomical work, the Almagest, examining the whole cosmos, earth and sky, Ptolemy had clearly anticipated what would be the main target of his Geography. These treatises were the last important ones and the only entirely surviving ones in the field of astronomy and geography (meaning cartography). The handling of these subjects by Ptolemy was so “revolutionary” that their influence lasted for many centuries and was perceptible thereafter to any scholar keen on the study of sky and earth.

1 Ptolemy, an Outstanding Scholar

Claudius Ptolemy’s life (ca. 100–180) is largely unknown, except for the references to his observations made in Alexandria between 125 and 141. After its conquest by Octavian (the future emperor Augustus) in 30 BC, Egypt had become a Roman Province, but Alexandria remained an active commercial place and an exceptional centre of Greek learning, enjoying the benevolence of the Antonines Emperors. Ptolemy chose the beginning of the reign of Antoninus Pius (138) as the epoch of his star catalogue.

During the reign of Hadrian (117–138), another Alexandrian, Dionysius¹ wrote a Periegesis in 1187 hexameters. This poem, relying mostly on Eratosthenes or Strabo, and translated into Latin by Avienus (4th cent.) and Priscianus (early 6th cent.), was a great success for many centuries, conveying to a lot of students the traditional knowledge of the Ancients about the inhabited world.

¹ Jacob 1990.
Ptolemy, his contemporary, only concerned about recent discoveries or new prospects, never mentioned such an outdated handbook.

Ptolemy’s first great work, *Mathematike Syntaxis*, later named *Almagest* under Arabic influence, was composed not earlier than 150. In the foreword of this book, he claimed the superiority of Mathematical Science, the only one “offering to its devotees a sound and unquestionable knowledge” (Alm. 1.1). He considered Mathematics, a science built on geometry and arithmetic, as the only one being able to give reliable results. So, in his description of the cosmos, he did not leave any room for doubt or wavering. He demonstrated that the celestial sphere revolved daily around one of its diameters (the axis of rotation), the centre of this sphere being occupied by a motionless terrestrial globe. As the spherical geometry required (*Spherics* was the first name given to Astronomy), he specified: “the earth is approximately a point compared to the radius of the sphere of the so-called fixed stars” (Alm. 1.6). But the terrestrial globe was a reality; so it had regularly been thought of as a small replica of the celestial sphere.

In order to facilitate the study of the presumed rules controlling the movements of the cosmos, Ptolemy provided many geometrically established table (Alm. 1.9), explaining at once the method to calculate them. “Our aim is not only to make up tables to be used by people knowing nothing about the subject, but, through appropriate geometrical demonstrations, to give everybody the means of easy check” (Alm. 1.10). Ptolemy the mathematician was also an excellent teacher, ready to give anyone the necessary data.

Convenience was indeed one of his main concerns. Dealing with extremely intricate problems, he always looked for an easier and more convenient way of reaching the expected answer. So he extensively used the Greek adjective *procheiros* (or a word derived from it), often translated by “handy”. In particular, wishing to provide mere amateurs with an easier tool than the bulky *Almagest*, he published a revised version of the tables included in it as a separate work, entitled *Procheiroi Kanones*, or *Handy Tables*, whose format was more convenient for practical use than the corresponding sections of the *Almagest*. This propensity to combine or alternate major scholarly researches and vulgarising proceedings was a typical feature of Ptolemy’s genius.

Whatever subject he would deal with, Ptolemy wished to be as exhaustive and up to date as possible, but also easily understandable, so that every piece

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2 Pedersen 2011; Toomer 1984. Most of the quotations from the *Almagest* are inspired by Toomer’s translation.

3 Strab. 2.5.5: “Beneath each of the celestial circles falls the corresponding terrestrial circle which bears the same name on the earth as in the sky”.
of his work should become “a possession for all time” as Thucydides had wished for his History. In astronomy as in geography (meaning cartography), he aimed (and generally succeeded) at being the matchless standard for future generations.

2 A Survey of the Earth in the Almagest

The earth played a permanent role in the first books of the Almagest. Dealing with the terrestrial as well as the celestial sphere, Ptolemy considered the inhabited world as included in one quarter of the globe, a northern one, bounded by the equator and a meridian. In order to give a survey of the main features of this quarter, he made up a catalogue of the terrestrial parallels from the equator to the Northern Pole, reporting for each one its main characteristics (length of the longest daylight, distance in degrees to the equator, ratio of the gnomon to the equinoctial and solstitial noon shadows). These parallels were separated by a fraction of equinoctial hour in the length of the longest daytime, which meant that they were not equidistant. The first 26 parallels were distant from one another by a quarter of an hour, the last one being the parallel where the longest daytime lasted 24 hours, 66° 8’ 40” north of the equator; further on, 6 parallels were registered, distant by a whole month, the last one being the place, 90° from the equator, where the pole was at the zenith (Alm. 2.6).

Starting from the equator, Ptolemy alluded to the widespread hypothesis, supported among others by Eratosthenes, Posidonius and Polybius, of a rather temperate (and maybe inhabitable) equatorial zone. “It is said that the regions beneath the equator could be inhabited, since the climate must be quite temperate... But what these inhabited places are, we have no reliable grounds to

4 Thuc. 1.22: “It (this History) has been composed not as a prize essay to be heard for the moment, but as a possession for all time”.
5 This was the traditional teaching. See Strab. 2.5.6.
6 The Greeks used for everyday life the temporary hour, which varied according to the season. The scientists used the equinoctial hour, the same as ours. The length of the longest daytime was the usual reference to the latitude of a place.
7 A few centuries earlier, Hipparchus had examined the astronomical characteristics of the parallels distant from one another by one degree of latitude, from equator to the North Pole.
8 Geographers used generally the round number 24° for the distance between equator and tropic, or between polar circle and pole, but astronomers knew a more accurate value.
9 For the Greeks, the main circles of the sphere were first of all celestial, the terrestrial ones being the mere projection of them on the terrestrial globe.
say. For up to now, they are unexplored by men from our part of the inhabited world, and what people say about them must be considered guesswork rather than report” (Alm. 2.6). On this parallel (our terrestrial equator), day and night are always equal in length. As regards the parallels where the longest day exceeds 24 hours, Ptolemy was fully aware of their characteristics. The theory demonstrated that, where the Northern Pole is distant from the equator by 90 degrees, there was only one day and one night of six months each; the main celestial circles, equator, horizon, ever-visible and ever-invisible circles\textsuperscript{10} coincided, as the geometry of the sphere had taught long ago.\textsuperscript{11}

Further on, making up the table of the rising-times of the zodiacal signs according to the latitudes, Ptolemy reduced his investigations to eleven parallels, from $0^\circ$ to $54^\circ$ (Alm. 2.8); then, making up a « table of zenith distances and ecliptic angles » according to the latitudes, he considered only the seven main parallels, of Meroe (13h, at $16^\circ$, 27'N), Syene (13h 1/2, at $23^\circ$ 51'N, modern Aswan), Lower Egypt (14h, at $30^\circ$ 22'N), Rhodes (14h 1/2, at $36^\circ$N), Hellespont (15h, at $40^\circ$ 56'N), Middle of the Pontus (15h 1/2, at $45^\circ$ 1'N, our Black Sea), Borysthenes (16h, at $48^\circ$ 32'N, modern Dniepr) (Alm. 2.12). This selection of seven main parallels, the seven “\textit{klimata}\textsuperscript{12}”, had been in constant use in Antiquity, establishing a kind of frame for the latitudes of the inhabited world.

At the end of this “table of zenith distances . . .”, Ptolemy added a note clearly showing that, later on, he intended to more or less fulfil for the earth (or rather for the inhabited world) what he had done for the sky. “Now the only remaining topic . . . is to determine the coordinates in latitude and longitude of the noteworthy cities in each province, using the computations about the phenomena\textsuperscript{13} in each of these cities. As the setting out of this matter belongs to a specific field, geography, we shall present it by itself in a special treatise; taking into account the researches of those who have most fully worked out this subject, we shall record for each of the cities its distance in degrees from the equator, measured along its own meridian, and its distance in degrees, along the equator, of that meridian, to the east or west, from the meridian through

\begin{itemize}
\item\textsuperscript{10} As the celestial sphere could be almost entirely observed except for the area round the South Pole, it was rather easy to situate the position of the main circles, equator, tropics, ever-visible and ever-invisible circles; their projection on the earth defined the main terrestrial circles. Whence the usual wording: people living « beneath » such or such parallel.
\item\textsuperscript{11} The mathematician Theodosius of Bithynia (ca. 150–70 BC), author of \textit{Spherica}, had also composed a \textit{Peri oikeseon}, or astronomical tables for the main terrestrial parallels.
\item\textsuperscript{12} See Honigmann 1929. A \textit{klima} was the stretch of earth, between two parallels, in which the length of the longest daylight had roughly the same number of half-hours.
\item\textsuperscript{13} The \textit{phainomena} (“what is observed”) were the astronomical data peculiar to each city.
\end{itemize}
Alexandria, because it was for that meridian that we established the hour-intervals corresponding to the positions of the cities.” (Alm. 2.12).

Of course, the Almagest had the sky as its main concern; but the handling of the sky foreshadowed the handling of the earth in the Geography. Dealing with the starry sky, Ptolemy made up a huge list of more than a thousand stars, gathered into constellations, twenty for the northern hemisphere, six for the northern zodiacal signs (Alm. 7.5), six for the southern zodiacal signs, fifteen for the southern hemisphere (Alm. 8.1). For each star, he wrote down its longitude and its ecliptic latitude: as the precession of the equinoxes, discovered by Hipparchus and confirmed by him, was doomed to make the equatorial scheme (used by Hipparchus) rapidly obsolete, he chose to rely on the ecliptic one so that his star catalogue could enjoy an everlasting life.

In a following chapter, Ptolemy, as efficient as usual, gave the rules to observe when drawing the constellations on a solid globe so that they could be easily recognised by anyone: “The shapes of the individual constellations should be as sketchy as possible, a single line encompassing all the stars included in one constellation; its colour should not be too vivid against the general background of the globe. It is essential not to lose the advantages of the distinctions introduced between the stars; a variety of colours would destroy the resemblance of the image to the original. It will be easier, when directly observing the sky, to remember the combined positions of the stars, since we will be accustomed to the unadorned appearance of the stars in their representation on the globe too” (Alm. 8.3).

Although the major part of the Almagest was dedicated to the planetary motions, Ptolemy had already elaborated the method to be used when he was to deal separately with the terrestrial globe, its inhabited part and its representation on a globe or on a plane map. Moreover, the Almagest had already displayed a lot of geographical notions.

3 Ptolemy’s Geography

Towards the end of his life, Ptolemy carried out the project hinted at in the Almagest, “to determine the positions of the noteworthy cities in each province, in longitude and latitude” (Alm. 2.12). In this special treatise, he would confine himself to the terrestrial part of the cosmos, and more particularly to the inhabited world and its representation on a globe or on flat map. The

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14 For an edition and translation of this treatise, see Stückelberger, and Graßhoff 2006.
Geographike Hyphegesis, in eight books, fulfilled this program. In the first book, Ptolemy discussed the amount of knowledge handed down by his predecessors, specially by the last one, Marinus of Tyre (fl. 120 AD) and defined his own ideas about the size of the inhabited world and the best ways of drawing maps. The following ones, second to seventh, were devoted to an exhaustive catalogue of all the cities or features to be inscribed on the map, with their coordinates. The last book is a kind of summary, detailing 26 regional maps to be drawn after that of the world.

3.1 To Account for Recent Discoveries

In the Almagest, and later on in his famous astrological treatise, the so-called Tetrabiblos (in four books), Ptolemy had adopted the usual concept of an inhabited world included in one of the northern quarters of the terrestrial globe. But a recent geographer, Marinus of Tyre, doing his best to mend the existing maps of the known world, had considerably extended its limits by taking into account various recent narratives about military or commercial expeditions to southern Africa or eastern Asia.

Septimius Flaccus, legatus pro praetore in Numidia, had (probably after 76 AD) led his army from Libya southwards; three months later, he had reached Ethiopia. Then (ca. 83–92), Julius Maternus, looking for rhinoceroses and their ivory, left Leptis Magna and went south with the king of the Garamantes for four months; he mentioned a strange African place named Agisymba, far south of the equator. So Marinus took the winter tropic (24°S) as the southern limit of the known world. As he took the parallel of Thule (63°N) as its northern limit, the inhabited world according to him was 87° wide.

In Asia, the silk trade had been flourishing thanks to the peaceful relations between Parthia and the Roman Empire (63–113). Towards the end of the 1st century, a Macedonian trader, Maes Titianos, had sent his servants to the silk-producing land, held by the Seres; they travelled for twelve months through central Asia, reached a stopping-place called the Stone Tower, then went on to Sera, the capital of the country. Marinus—and Ptolemy after him—related...
this unusual expedition. Relying on this report, Marinus fixed the length of the inhabited world, from the Blessed Islands (sc. Canaries) to Sera, to fifteen hour-intervals or 225 degrees. So, in latitude as in longitude, the traditional idea of an inhabited world entirely included in one of the northern quarter of the terrestrial globe, allowing the chance of three other unknown worlds in the three remaining quarters, definitively burst to pieces.

Did Marinus, who had so vividly criticized his predecessors and made so many revisions of the ancient maps, succeed in drawing a duly corrected map? In fact, he probably tried, as Ptolemy blamed him for having selected the worst method of drawing plane maps (Geog. 1.20). But he probably was so keen at pointing out the supposed errors made by previous mapmakers that he had no time to finish the job. Anyway Ptolemy reproved Marinus for lacking coherence in his display of coordinates: “the parallels are drawn through some places and the meridians through others, so that many localities lack one or the other position” (Geog. 1.18). Moreover in his localisations, Marinus was not steady; he often varied from one revision to the next one. So, wishing to correct these shortcomings, Ptolemy proclaimed that he would provide for each registered place both coordinates, longitude and latitude, and offer a better method for drawing plane maps, easier to read, and more suggestive of reality.

First of all, Ptolemy corrected many distances handed down by Marinus, in Asia or Africa. He censured him for having too easily converted sailing or marching days into stadia, without taking into account the curves of the roads or the variability of the winds. So, at the end of numberless calculations, Ptolemy drastically reduced Marinus’ data. He limited the length of the oikoumene at twelve hour-intervals, or 180°. He chose as southern limit of the inhabited world the parallel in the southern hemisphere opposite to the one through Meroe in the northern one, so 16°1/2S. Therefore the whole width of the inhabited world, from this southern limit to the Thule parallel (63°N), would amount to roughly 80°. This new size of the inhabited world, in particular the 180° in length, was much more convenient than the Marinus’ one for drawing the whole oikoumene on a plane map; many intricate criticisms of Marinus’ distances probably aimed at reaching such handy results.

Determined to preserve Marinus’ corrections when he judged them legitimate, but intending as well to introduce his own improvements, Ptolemy

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20 Crates of Mallus (fl. ca. 170 BC), the first Head of the Library in Pergamum, had built a huge terrestrial globe with four inhabited worlds, in each quarter of the globe, separated by two oceanic belts, one along the equator, the other along a meridian (See Strab. 1.2.24 and 2.5.10). The only known world was “ours”, as it was called.
provided a catalogue of provinces and satrapies\textsuperscript{21} both exhaustive and handy. “We have taken care that our account should be convenient. Hence we have written down for each province the details of its boundaries, its position in longitude and latitude, the relative situation of the more important peoples in it, and the accurate location of the more noteworthy features, cities, rivers, bays, mountains, and generally all that ought to appear in a map of the \textit{oikoumene}. So we have written down the number of degrees (of such as the great circle contains 360) counted in longitude, along the equator, between the meridian drawn through the required place and the meridian that marks off the western limit of the \textit{oikoumene}, and the number of degrees counted in latitude, along the meridian of the place, between the parallel drawn through the said place and the equator” (\textit{Geog.} 1.19). Actually, Ptolemy filled books second to seventh with huge lists of provinces and satrapies; he accurately located their noteworthy cities or features through pairs of coordinates, using as prime meridian the one through the Blessed Islands.

But what was the estimated size of the terrestrial globe? Eratosthenes,\textsuperscript{22} who had been the Head of the Library in Alexandria five centuries earlier, had estimated the terrestrial circumference at roughly 252,000 stadia, thanks to a geometrical method. Hipparchus had adopted this estimation “which does not differ much from the truth”,\textsuperscript{23} so that one degree of meridian or of equator would be 700 stadia long. Strabo, Geminus,\textsuperscript{24} later geographers relied on this value of the terrestrial circumference.

However, Posidonius (ca. 135–50) who had spent the best part of his life in Rhodes, had tried an astronomical (but unfortunately unfit) method to measure the terrestrial circumference\textsuperscript{25} and proposed two possible values for it, either 240,000 stadia, or only 180,000 stadia, “the measurement which makes the earth smallest in circumference” (Strab. 2.2.2).

Curiously enough, Marinus, and later on Ptolemy, without trying to make their own investigation, adopted the value 180,000 stadia for the circumference of the earth, asserting (wrongly) that it was the most commonly used.\textsuperscript{26} Thus one degree of meridian was 500 stadia long, a very convenient number for further calculations. However, while one degree of meridian would be

\begin{footnotes}
\footnotetext[21]{Ptolemy refers to the administrative divisions of the Roman and Parthian Empires.}
\footnotetext[22]{Aujac 2001, 41–64.}
\footnotetext[23]{Strab. 1.4.1.}
\footnotetext[24]{Geminus of Rhodes (ca. 50 B.C) wrote a handbook of astronomy and mathematical geography entitled \textit{Introduction to the Phenomena}. See Aujac 1975, or Evans, and Berggren 2006.}
\footnotetext[25]{See Cleomedes, \textit{Kuklike theorion meteoron} 1.10.2 (Bowen, and Todd 2004).}
\footnotetext[26]{Ptol., \textit{Geog.} 1.7.1; 1.11.2; 7.5.12.}
\end{footnotes}
always 500 stadia worth, the degree on the parallels varied in length, growing steadily shorter from the equator to the pole, in which place it was reduced to a point. It had long been known that the parallel through Rhodes (36°N) was in length four fifth of the equator; if one degree on the equator was worth 500 stadia, one degree on the parallel through Rhodes was only worth 400 stadia, a round number very easy to use in reckonings.

This choice for a smaller size of the earth had strange consequences. As Ptolemy generally used the distances in stadia\(^27\) proposed by his predecessors, he enlarged all these data by one third. So, the Mediterranean was much longer according to Ptolemy than in reality, and it was the same for the distance Blessed Islands—Sera. While Eratosthenes had estimated the distance Cadiz—India through the Atlantic Ocean to be 2/3 of the Rhodes parallel, Ptolemy’s maps reduced this distance to less than one half of this parallel, and Marinus to only 135°.

### 3.2 Mapping the Inhabited World on a Globe or on a Plane Chart

The catalogue that Ptolemy would provide was meant to be a very convenient tool to draw a map. Of course, the likeness to the real *oikoumene* would be best if the map was drawn on a globe. Two centuries earlier, Crates of Mallus had built a globe whose surface was occupied by four symmetrical worlds, one known and inhabited, the three others existing only by guess.

On a terrestrial globe, the map of the inhabited world, whose size could be either the one proposed by Marinus, or the one drastically reduced by Ptolemy, would still occupy more than one northern quarter of the globe,\(^28\) but much less than, on the celestial sphere, the visible part of the sky described in the *Almagest*.

At first Ptolemy explained how to draw a world map on a globe. He advised to draw meridians “at intervals of a third of an equinoctial hour” (*Geog*. 1.23). As the inhabited world has been fixed by Ptolemy to twelve hour-intervals in longitude, 36 meridians should be drawn, at 5° distance from one another. As for the parallels, Ptolemy pointed out 21 of them north of the equator, at a distance of 1/4, 1/2, 1 hour in the length of the longest daylight, from the 4° 1/4 parallel (“as approximately established by geometrical demonstrations”) to the one through Thule, put by Marinus and Ptolemy at 63°N; two parallels had to be added south of the equator, with a difference of half-hour each. The first one was through Cape Rhapton (near the modern Dar es Salaam) and Kattigara

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\(^{27}\) If one degree on the meridian was 700 stadia long, the *stadion* used by the scientists would be roughly 158 m.; if it was only 500 stadia, the *stadion* would be roughly 222 m.

\(^{28}\) As Ptolemy’s Asia was not limited by the Ocean, the continent extended eastwards.
near Hanoi), at 8° 5/12S. The other one is the southern limit, “as far south of
the equator as the parallel through Meroe is north of it” (Geog. 1.23). In this
brief list of the parallels to be drawn on the globe, the only geographical places
quoted are Meroe, Syene (on the summer tropic), Rhodes, and Thule; all of
them are north of the equator; none is quoted south of it.

A globe, on which a relatively small space was needed for the drawing of the
map, would be both unwieldy and difficult to read. So Ptolemy chose to deal
mostly with the mapping on a flat surface. He criticized Marinus for having
used the orthogonal scheme, with meridians and parallels drawn as straight
lines and at right angles, each parallel being equal to the one through Rhodes;
he judged this procedure unable to take into account proportionality or spheri-
cal appearance.29 This kind of orthogonal scheme was probably the one also
used by Eratosthenes and supported by Strabo, who justified this choice: “Our
mind can easily transfer to a circular and spherical surface the figure observed
by the eye on a plane surface” (Strab. 2.5.10). Of course, it was rather legiti-
mate to use this method for an inhabited world mostly stretching along the
Mediterranean. But the maps intended by Marinus or Ptolemy were much
larger. So it became compulsory to provide new types of flat maps, more likely
to preserve both proportionality and spherical appearance.

First of all, Ptolemy reckoned the relations between the main parallels
to be used in the mapping of the world. It was well known that the parallel
through Rhodes was the four-fifth of the equator, but Ptolemy added: “On
the globe, if the great circle is 5, the parallel through Thule amounts to nearly
2 1/4, the one through Syene to 4 7/12, the one through Meroe to 4 5/6” (Geog.
1.24.17). These were the four parallels used to draw the world map; the one
through Thule (63° N) was taken as the northern limit of the oikoumene, the
one through Rhodes (36° N) was the central parallel on Eratosthenes’ map,
the one through Syene (modern Aswan, beneath the summer tropic, 24° N)
was the central parallel on Ptolemy’ map, the one through Meroe (16° 5/12)
had so far been considered as the southern limit of the known world, this limit
being conveyed by Ptolemy to its opposite in the southern hemisphere.

This first type of mapping the whole inhabited world on a flat surface
could be called the plain conic projection.30 A rectangle whose length was
twice the width was bisected by a median perpendicular to its basis; the top
of this median, far outside the rectangle, would figure the Northern Pole. From
this fictitious pole as a centre, one should draw four circles (or rather arcs of

29 See Geog. 1.20.
30 These so called projections are only geometrical procedures to obtain a convenient
scheme. They are not to be mistaken for modern types of projection.
the parallels through Thule, Rhodes, the equator and Anti-Meroe. Moreover, from the same fictitious pole, one should draw six straight lines (figuring the meridians) on each side of the median, distant from one another by 4 units on the parallel through Rhodes. So, if the fictitious pole\(^{31}\) is 131 units \(5/12\) distant from the basis of the rectangle, the parallel through Rhodes (36°N) should be drawn with a radius of 79 units, the one through Thule (63°N) with a radius of 52 units, the equator with a radius of 115 units and the one through Anti-Meroe (16° 30′S) with a radius of 131. As the real Anti-Meroe parallel was shorter than the equator, one had to break the meridians at the equator in order to reduce this parallel to its true value. Except for this small area south of the equator, it would be rather easy to locate the points figuring cities or other landmarks on the map: one could use a revolving ruler, pegged at the fictitious Northern Pole and duly graduated.

This plain conic projection, convenient as it was, had a major drawback: the breaking of the meridians at the equator. So Ptolemy planned another type of conic projection which would make this plane map more evocative of what was seen on a globe: the meridians would be rounded off, except the central one, and the parallels slightly flattened, the fictitious pole being distant from the equator by 181 units \(5/6,^{32}\) reduced to 180 units as more convenient. The three parallels to be proportioned in length to the real ones would be those through Thule (63°N), Syene (24°N, the central one) and Anti-Meroe (16° 1/2S). This kind of map, more similar to what was seen on a globe, would be more difficult to work out: the ruler could no longer be used, so that the various features to inscribe on the map would have to be located more or less at a guess. Therefore Ptolemy did not try to blot out the plain conic method, which obviously would be favoured by lazy people, always “quite ready to stick to the handiest procedure” (Geog. 1.24.22). Among the mapmakers working during the Renaissance, some of them used the plain conic projection, while others favoured the modified one.

As for the regional maps, which could have different sizes according to the number of features to be inscribed on them, “it will not be very inaccurate if we draw straight lines instead of circles, and if moreover the meridians are not converging but parallel to one another” (Geog. 1.24.22). So, for the regional maps, Ptolemy advised to use the orthogonal scheme, as more appropriate to

\(^{31}\) Ptolemy does not explain here his choice of this number. In fact, he adds 25 to the sum of 90 (the distance in degrees from the equator to the Northern Pole) and 16 \(5/12\) (the distance in degrees from the equator to Anti-Meroe); so the radius for the Rhodes parallel, at 54° from the real North Pole, will be 79 (= 25+54) in length; and so on.

\(^{32}\) Ptolemy obtains this result through a geometrical demonstration (Geog. 1.24.10–13).
relatively small areas. A few Renaissance mapmakers chose to use a trapezoidal scheme, forgetting Ptolemy’s relevant advice.

A third method for sketching the inhabited world was proposed by Ptolemy near the end of his *Geography*. For a long time, the earth had been known through the sky and the terrestrial globe considered as a replica of the celestial sphere. So Ptolemy, probably wishing to emphasize this dependence, resolved to figure the inhabited world inside a celestial sphere, reduced to a network of rings, as it was in an armillary sphere. But as the map of the inhabited world had to be entirely visible and easily readable, Ptolemy carefully reckoned the adequate size of both spheres, and the correct position of the celestial circles so that the sketch of the *oikoumene* should not be partly hidden by the celestial rings. Some drawings made during the Renaissance according to Ptolemy’s instructions give a rather clear idea of what he had in mind.

3.3 The Lists of Places to be Inscribed on World or Regional Maps

Books second to seventh of the *Geography* were filled with the catalogue of the noteworthy cities or features likely to appear on a world map. Each quoted place was precisely located by both coordinates, expressed in degrees, the latitude north or south of the equator, the longitude east of the meridian through the Blessed Islands (our Canaries) regarded as the prime meridian. In his previous project, as stated in the *Almagest*, Ptolemy had already wished to use degrees for the coordinates, but then he considered as prime meridian the one through Alexandria, so the longitudes would have to be registered as east or west of this meridian. To use the meridian through the Blessed Islands as prime meridian was more convenient.

Were these coordinates, expressed so precisely in degrees and fractions of degrees, as accurate as they appear? It is highly dubious. While Ptolemy, at work in Alexandria, could observe almost all the stars written down in the *Almagest*, it is obvious that he could not have checked by himself the localisation of so many terrestrial places registered in the *Geography*. But being well aware that, to draw a map, every feature to inscribe on it had to be exactly characterised by both coordinates, he never failed to indicate latitude and longitude for each place, so that anybody, even a layman, would be able, thanks to this catalogue, to draw fresh maps instead of copying old ones with the risk of making them more and more erroneous.

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33 See Ptol., *Geog.* 7.6.1–15 and *Geog.* 7.7.1–4. Solid spheres, on which the constellations were drawn, and ringed (or armillary) spheres including a small terrestrial globe inside the main circles of the celestial sphere, were instruments commonly used in Greco-roman schools (see Gem. 16.10).
However, fearing a possible misinterpretation of his work, Ptolemy had duly warned his readers. “The numbers of degrees in longitude and latitude of well-trodden places could be considered as quite close to the truth because rather consistent accounts have been continuously passed down; but for the places that have not been so well explored, owing to the sparseness and uncertainty of the information, the coordinates should be considered as roughly estimated according to their proximity to more trustworthy positions or drawings. Our only purpose was that none of the places to be included in the whole oikoumene would lack a defined position” (Geog. 2.1.2). So, as Ptolemy himself had clearly notified, it would be vain to rely on apparently so accurate but really so approximate coordinates for every quoted place, except for the very well-known ones.

As this catalogue should be used to draw a world map, Ptolemy as usual looked for the most convenient way to facilitate the sketching. “We have chosen an order of presentation which would make the drawing easier; for instance, we shall always progress from left to right, the hand proceeding from what has already been inscribed to what is not yet so. As the northern places are drawn before the southerly ones, and the western before the eastern, upwards means always the North, for the drawer or the observer, and the right-hand side means always the Eastern part of the oikoumene, either on the sphere or on the flat map. Therefore we shall first draw Europe which we shall separate from Libya by the Strait of Heracles (Gibraltar), and from Asia by the successive seas between these continents, Lake Maeotis (Sea of Azov), the River Tanaïs (Don) and the meridian further on through an unknown land. Next we would set down Libya, dividing it from Asia first by the seas that extend from the gulf near Cape Prason (possibly Delgado) in Ethiopia to the Arabic Gulf, then by the isthmus which, from the far end of this gulf, towards Heroopolis (near Suez), to our sea (the Mediterranean), separates Egypt from Arabia and Judea; so Egypt will not be split into two parts, as it happens when the Nile is used as the border34 (anyway it is better, as far as possible, to divide the continents by seas rather than rivers). Last we shall write down Asia” (Geog. 2.1.4–5). The catalogue was organised according to these requirements. Going through the three known continents, Ptolemy first dealt with Europe (2.2–3) and Libya (our Africa, 4), the western continents, then Asia (5–7.4),35 the

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34 Strabo (1.4.7) had fully discussed the question of the boundary-lines between the continents; when describing Egypt, he chose the River Nile to divide Asia from Libya.

35 Geographers had different ways of touring the oikoumene. Eratosthenes, whose work is lost, had probably started from Far East. Strabo had successively described Europe, Asia, then Libya. Pomponius Mela (fl. ca. 40 AD), in his De Chorographia, toured the
eastern one. So he began the geographical catalogue with the Britannic Islands, first Ierne (Ireland), then Albion (England), and so on.

More than eighty provinces or satrapies were thus taken into account. For each one, Ptolemy wrote down first the main features of the sides limiting the area described, then the important cities or special spots included in it. Each quoted place was precisely located through its pair of coordinates, as he had promised.

To this exhaustive survey of the oikoumene, Ptolemy added a summary account of general data, in order to make the mapping of the inhabited world easier. So he described its boundaries: unknown lands to the east and the south, ocean and unknown lands to the west and the north. Further on, dealing with the three continents, he introduced a new link between Asia and Libya, namely “the unknown land that surrounds the Sea of India” (Geog. 7.5.5). Then he indicated in stadia the length of the main half-parallels to inscribe in the maps: 90,000 for the equator, 86,330 for the southern parallel (Anti-Meroe), 40,000 for the northern limit (Thule), 72,000 for the parallel through Rhodes, 82,336 for the one through Syene (Aswan, the summer tropic).

In the last book (8) of his Geography, Ptolemy explained how to divide the map of the oikoumene into regional maps so that the data should be located on them in an appropriate scale, which would improve their legibility. Accordingly he made up a new catalogue, heavily reduced, to be used in the drawing of regional maps. Forgetting the eighty odd provinces or satrapies described in the previous catalogue, he selected 26 areas to suit the regional maps: 10 for Europe, 4 for Libya, 12 for Asia; these 26 maps were due to fill the whole inhabited world. For each one, he indicated first the ratio between the length of one degree on the central parallel of this map (which varied with the latitude) and the invariable length of one degree on the meridian. Then he detailed the boundaries of the area mapped. When he reached the list of cities or features to inscribe on the map, he selected a different way of mentioning their coordinates. Neglecting the degrees, he pointed out the latitude through the length of the longest daylight (as he had done previously in Alm. 2.6 and in Geog. 1.23), and the longitude through distances expressed in equinoctial hours either to the east or to the west of the meridian through Alexandria (as he had planned in Alm. 2.12 and in Geog. 1.23). He would gladly have added the fixed stars Mediterranean Basin counter-clockwise, from Libya to Asia and Europe. Pliny the Elder (ca. 24–79) had examined the inhabited world (NH 2–6), first clockwise for the northern half, then counter-clockwise for the southern half. Later on, Dionysius from Alexandria (ca. 125), in his Periegesis in hexameters, described Libya, Europe, Islands, then Asia.

36 Since the length of the inhabited world had been limited to 180°.
getting across the zenith for each quoted place\textsuperscript{37} (as Hipparchus had done) if they had remained for ever at the same distance from the celestial equator, but he had learned from Hipparchus and verified by himself that their distance to the equator varied along with the centuries; it would not have been pertinent for him to include so variable data in a work meant to last for ever.

4 Ptolemy’s Posterity

Ptolemy had wished for his whole work an everlasting life and a vivid usefulness to future generations. By and large, this wish was rather fulfilled.

4.1 The Settling of Irremovable Frames

The \textit{Mathematike Syntaxis}, translated into Arabic in the 9th century, was so valued by the oriental scholars that they called it “The Greatest” (\textit{megiste} in Greek), turned into \textit{Almagest}. The faith in a geocentric cosmos held on for many centuries, till Galilei and Copernicus removed the earth from its central place. But it is obvious that, at least, the geocentric hypothesis had allowed the Greco-roman scholars to get a thorough theoretical knowledge of the whole terrestrial globe.

The star catalogue became the sound basis for any subsequent research. The names of the stars (very often through translation into Arabic) and the figures of the constellations are on the whole still in use; the moderns had only to coin other names and figures for the part of the sky, around the Southern Pole, which had remained invisible to people neighbouring the Mediterranean.

As for the \textit{Geography}, it had been such a new accomplishment, and such an exhaustive one, that it looked for a long time practically intangible. Unlike so many Marinus’ treatises, which had left most of the localisations unsettled, Ptolemy’s catalogue was apparently so accurate and comprehensive, including so many cities and landmarks with their coordinates, that rapidly it seemed out of question to try any emendation or improvement. The figure of the inhabited world drawn by Ptolemy, in spite of its mistakes, remained unchangeable for centuries.

4.2 A Fruitful Innovation: The Techniques of Map-making

The best accomplishment in cartographic matter, besides the catalogue of places with a full range of coordinates, was the discussion about the various schemes able to give a tolerable idea of what is spherical when drawn on a

\footnote{Ptol., \textit{Geog.} 8.2.2.}
plane surface. Strabo, relying on Eratosthenes, and Hipparchus, had somehow raised this problem, crucial for mapmakers. But Ptolemy, whose researches in this field are the only ones fortunately preserved, explained at length how to proceed.

The Greeks had already sought to produce material pictures of the inhabited world. Herodotus sneered at scholars who drew the *oikoumene* as a circle; but he narrated how Aristagoras from Miletus (ca. 500 BC) used a map carved on a bronze support to show to the leaders of Sparta and Athens the road leading to Babylon. This type of circular world map was in use for a long time. Geminus (ca. 50 BC) complained about this doggedly bad habit of drawing circular world maps: "Those who draw circular maps wander far from the truth, for the length there is equal to the width, which is not the case in nature . . . The inhabited part of the earth is a certain segment of sphere having the length the double of the width, so it cannot be bounded by a circle" (Gem. 16.4–5).

Eratosthenes had been the first to try to draw a map to scale, thanks to his measure of the terrestrial circumference. Strabo who, in spite of his criticisms, relies mostly on him, recommended to draw the world map “on a plane board of at least seven feet” (Strab. 2.5.10), for the use of a globe, a better imitation of reality, would be too cumbersome. We gather from Strabo that Eratosthenes’ world map was in a kind of orthographic scheme, with the straight lines figuring the parallels equal to the one through Rhodes. Hipparchus, finding fault with this scheme, had probably proposed a kind of conic projection alluded to by Strabo (Strab. 2.5.10). Ptolemy however was surely the first to have detailed all the reckonings necessary to work out the plain conical projection or the modified one. His mapping of the inhabited world was truly revolutionary.

4.3 The Geography through the Centuries

Ptolemy’s *Geography* had been translated into Arabic as soon as the 9th century, and maps drawn accordingly. The 10th century Arabic historian al-Masudi claimed to have seen, in a *Geography* probably by Ptolemy, brightly coloured maps, with red, yellow or green mountains, variously shaped seas, and even the

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38 Strab. 2.5.10: “Although the several meridians drawn through the pole all converge on the sphere toward one point, yet on our plane-surface chart it will not matter to make the straight lines converge slightly, for there is no necessity for this in many cases, nor are the converging straight lines as easily understood as are the curved lines on the sphere”.

39 See Hdt. 5.36 and Hdt. 5.49.

40 See Gautier Dalché 2009; Shalev, and Burnett 2011; Talbert, and Unger 2008; Talbert 2012b; Thrower 1999; Broc 1980.

41 See Barbier de Maynard, and Pavet de Courtemelle 1861, 183, 204.
course of the River Nile. But in the Occident, the Geography seemed to have been more or less forgotten. At least, the learned monk Maximus Planudes (ca. 1255–1305) is said to have discovered in Byzantium a very old and neglected manuscript of the Geography, without maps; so he managed to have it copied, and he added maps drawn according to Ptolemy’s precepts. The two oldest preserved manuscripts copied at the end of the 13th century, Urbinas gr. 82 (actually in the Vatican Library) and Seragliensis 57 (in Istanbul), adorned with 26 regional maps after the world one, probably showed the result of his researches and accomplishments.

At the end of the 14th century, the Greek scholar Manuel Chrysoloras, fearing the threatening Ottomans, had brought from Byzantium into Italy a lot of Greek manuscripts, and among them one of the Geography. He started to translate it into Latin, then entrusted one of his pupils, the Florentine Jacopo Angelo, with the fulfilment of this task. In 1406, the Latin version of the Geography was brought to an end and dedicated to the pope Alexander V. Painters and map-makers, mainly in Florence, hastened to bustle about, in order to add beautiful maps to the Latin copies of the Geography (which Jacopo Angelo had entitled Cosmography). They used as well the plain as the modified conic projection for the world map and, for the regional maps, either the orthogonal scheme, favoured by Ptolemy, or a trapezoidal one (the so-called Donis projection) judged more pertinent.

The popularity of mapmaking thanks to Ptolemy induced some artists to propose, after the Ptolemy’s maps, modern ones of Spain, Gaul, Italy, Holy Land, etc., with rectified coordinates. Bernard Sylvanus from Eboli, at the end of his Latin edition of the Geography (1511), proposed a world map including a part of America newly discovered, in a pseudo-conical equal-area projection similar to the one used later on by R. Bonne (1727–1795). Likewise Gerardus Mercator (1512–1594) had already published the Latin text of Ptolemy’s Geography and drawn the corresponding maps (1581) when he decided to establish his own collection of maps (1595), using the type of projection named after him: this was an orthographic projection, improved by increasing the distance between the parallels from south to north, so that a straight line joining two points of the map would cut all the meridians with the same angle, a propriety very useful to sailors.

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42 In his dedication, Jacopo Angelo greeted Ptolemy as “the most learned of all mathematicians. He meticulously explained the disposition of the earth and everything else, without departing from mathematics” (Shalev, and Burnett 2011, 227).

43 This type of projection had been practised by Nicolaus Germanus about 1460.
In the 15th century, the flourishing of Latin manuscripts and editions of the *Geography* inevitably contributed to increase the desire of enlarging the knowledge of the world. The Genoese Christopher Columbus owned a copy of the 1478 Rome edition, in which he learned that the stretch of Ocean between Iberia and India could be less than 180° according to Ptolemy, or even less than 135° if Marinus was right. It was a strong impulse to sail from Cadiz along the 36° parallel through the Atlantic Ocean; Columbus’ journey (1492) had to be interrupted by the presence of islands (Cuba and Haiti) near the new continent, as Strabo44 had predicted long ago. The discovery of new lands was an indirect consequence of the fame of Ptolemy’s mapping of the world.

On several world maps of the *Geography*, and particularly on the Ulm edition (1482), the Indian Ocean was enclosed by a strip of land, this “unknown land that surrounds the Sea of India”, alluded to by Ptolemy (*Geog. 7.5.5*). Relying on this hint, the Royal Society sent James Cook in search of an Austral continent and its expected profits;45 several sailings, from 1768 to 1775, were needed to make sure that this continent did not exist; but thanks to this search, many others unknown lands were discovered.

5 Conclusion

Ptolemy was lucky enough or clever enough to get most of his writings preserved. In each one, he tried and succeeded to be not only exhaustive but also up-to-date, presenting a broad account of the scientific knowledge stored during so many centuries of researches, and adding his own experiments and methods of transmission. Working in Alexandria, still a matchless centre of learning, he gathered faithful disciples and, later on, commentators and editors. Ptolemy’s various accomplishments were probably accountable for the loss of many noteworthy treatises and clever attempts due to his predecessors. But fortunately enough, Ptolemy was not only a good transmitter, providing a

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44 Strab. 1.4.6. Eratosthenes having valued the length of the inhabited world to 78,000 stadia on the parallel through Rhodes (worth 200,000 stadia), could conclude: “If the immensity of the Atlantic Sea did not prevent, we could sail from Iberia to India along one and the same parallel over the remainder of the circle, when has been subtracted the aforesaid distance (sc. the length of the inhabited world), which is more than a third of the whole circle”. But Strabo objected: “In this temperate zone, there could be two inhabited worlds, or even more, and particularly near the parallel through Rhodes that is drawn across the Atlantic Sea”.

45 See Thomas 2003; Richardson 2005.
scientific approach to the knowledge of the cosmos, sky and earth, which has been prevalent in Antiquity, but also a first-rate discoverer of new procedures and useful techniques.

Ptolemy, such an amazing scholar, was able to succeed in all kinds of sharp researches but also to explain most of his proceedings and results in an easy and handy way, so that they should be at the disposal of any amateur. In the Geography, his discussion about the best way to represent on a flat surface what is really on a spherical one, his demand of both coordinates for every place to inscribe on a map, provided a sound target to future generations. In the art of mapmaking, as in many other fields, he was a peerless innovator, initiating a kind of revolution accounting for his everlasting fame.
FIGURE 18.2
Ptolemy, Latin 4801, Fol. 74 (Courtesy of Bibliothèque Nationale, Paris).
FIGURE 18.3  Ptolemy, Latin 4801. Fol. 75 (Courtesy of Bibliothèque Nationale, Paris).
FIGURE 18.4  Ptolemy, Latin 4801. Fol. 76 (Courtesy of Bibliothèque Nationale, Paris).
PART 3

Geographical Rebounds
CHAPTER 19

The Tabula Peutingeriana and Antique Cartography

Michael Rathmann

1 Antique Cartography in the View of Recent Research

For a long time, researchers uncritically had been repeating the conviction that maps existed in antiquity and that they were comparable in appearance and particularly in function to modern ones. Pietro Janni may be considered the initiator of a constructive debate on antique cartography.\(^1\) The falsification of his hypothesis that antique cartography never existed, caused a shift of productive questions into the centre of discussion:\(^2\) What is actually a map? What types of graphic illustrations of physical space do exist? Were maps only used in a small circle of academic élites or were they also available to the wider public? What are the reasons for the problematic basis of source material and the poor state of transmission? May antique specialised texts (\textit{e.g.} Strabo, Pomponius Mela, Pliny) possibly be read as descriptions of maps?

Meanwhile, academic discussions have made quite clear that maps existed and were principally available to the socio-political élites of Greece and the \textit{Imperium Romanum}. However, they were largely ignored in political, administrative, and military decision making, and were not even considered for preparing journeys.\(^3\) For purposes of orientation, there were intineraries. They were handier, cheaper, and could easily be produced for each trip individually. Political decision-makers definitely had certain general knowledge of space (mental mapping) due to personal travel experiences. Geographical literature and maps probably rather served as supplements or for the consolidation of knowledge of space. Taken together, these circumstances explain the present state of source material and the history of development of ancient cartography.

‘Scientific’ maps, as we can prove them \textit{e.g.} for the \textit{Geography} by Claudius Ptolemy, obviously aimed at to-scale representations of the \textit{oikoumene} and of

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1 Janni 1984; cf. Brodersen 2003.\(^2\)
2 Cf. Prontera 2001c; Brodersen 2003; Talbert 2004; Mittenhuber 2009b; Rathmann 2013b.
3 Rathmann 2014b.
large-scale space.\textsuperscript{4} Because of their extreme production costs\textsuperscript{5} and their deficient suitability for daily use they certainly remained only within scholarly circles. Considerably more common were map-like drawings focussing less on to-scale representation, but rather on general visualisation of geographical space. The \textit{Tabula Peutingeriana} (TP) seems to belong to this second group, too. What the purpose of these not-to-scale maps was and what socio-political groups their owners and users belonged to, still remains to be investigated more closely. One hypothesis as to this will be presented at the end of this contribution: It is possible that not-to-scale maps served as additions to chorographical works (\textit{e.g.} Artemidorus, Strabo) in Alfred Stückelberger’s sense, who held the opinion that, with regard to antiquity, we should always presuppose unity of image and word.\textsuperscript{6}

### Name and History of the Manuscript (Cod. Vind. 324)\textsuperscript{7}

The first known owner of the TP was the humanist Konrad Celtes (1459–1508). He probably stole the parchment scroll in the monastery library on Reichenau Island in Lake Constance, which was absolutely common behaviour in travelling scholars of this period.\textsuperscript{8} In summer 1507 Celtes handed over the rotulus to Konrad Peutinger (1465–1547) in Augsburg and confirmed this donation in his will of 1508. Connected to this was the request to publish the map. Therefore—according to juridical norms of his time—Peutinger obtained an Imperial printing licence and also produced two drawn copies of the first parchment sheet as a sample. Thus, Peutinger became the name patron of the manuscript, although he ultimately was unable to arrange for the print due to his numerous professional obligations. However, it is known that he enjoyed showing the scroll to his guests. Whether he was also responsible for the—today almost illegible—names ‘Regenspur’ and ‘Salzpurg’ next to

\begin{itemize}
\item \textsuperscript{4} Mittenhuber 2009a; Mittenhuber 2009b.
\item \textsuperscript{5} Maps, particularly in the case of elaborate polychrome drawings, were difficult to copy. Apart from a scribe, a draughtsperson was required. Therefore it is intelligible that also our Medieval manuscripts often contain only monochrome, usually very schematic map-like sketches. The copyist of the text was probably able to produce such simple drawings him-/herself while copying and did not have to consult a draughtsperson.
\item \textsuperscript{6} Stückelberger 1994. On this see also ch. 5.
\item \textsuperscript{7} Miller 1916, XIII–XVI; Talbert 2010a, 10–71; Weber 1976, 9–10, 29–31.
\item \textsuperscript{8} Potential find sites were different monasteries of the Swiss-Southern German sphere (\textit{e.g.} St. Gallen) and along the River Rhine (\textit{e.g.} Worms, Speyer, Colmar). An origin on Reichenau Island as suggested by Lieb 1974 has generally been accepted by researchers. Cf. Gross 1999.
\end{itemize}
Regino and Ivavo remains uncertain. Anyway, Peutinger’s heirs showed little interest in the Tabula Peutingeriana. It was only Markus Welser (1558–1614), a distant relative of Peutinger, who published at least the two first sketches in 1591. This black-and-white print shows that Peutinger had freehandedly copied the Tabula. The first complete drawn copy was published by Welser in 1598 in collaboration with Jan Moretus (1543–1610) under the title of Tabula itineraria ex illustri Peutingerorum bibliotheca. Another descendant, Ignaz Desiderius von Peutinger (1641–1718), sold the parchment scroll so that it came—for the respectable sum of 100 ducats—via the bookseller Paul Küz in 1715 and the antique dealer Karl Gustav Heräus in 1717 into the possession of Prince Eugene of Savoy. After his death in 1737, the Holy Roman Emperor Charles VI purchased his library. Thereby the TP entered the Imperial Library in Vienna in 1738 where it is still kept today (Austrian National Library Cod. Vind. 324).

3 State of Preservation, Dimensions, Shape, and Dating of the Parchment Rotulus

The bad state of preservation of the scroll with its eleven parchment sheets was soon recognised in Vienna. Apparently, it was mounted on canvas and rolled over a cylinder. This was meant to facilitate its rolling in and out. Constant decay, however, was the reason that the rotulus was dissolved in 1863. Fragile parts were strengthened by paper and the eleven sheets have been stored separately ever since. In the 1930s the parchment sheets were encased between glass plates, which deteriorated the state of preservation due to the absence of air. They were replaced by perforated, chemically neutral plastic plates. Since this did not stand the test of time either, the sheets were placed on cardboard and covered by a transparent plastic plate. Apart from its age, modern use, and temporary inadequate storage, the parchment also suffered from blue vitriol contained in the green colour.

9 Illustrations of the first TP publication of 1591 and 1598 in Weber 1976, fig. 3–4; Talbert 2004a, fig. 3a/b, 4.

10 For a top-quality reproduction of the TP consult: http://aleph.onb.ac.at/F/?func=find-b&find_code=IDN&request=AL00161171&local_base=ONB06&adjacent=N (1.5.2014). As to earlier copies and editions mention should be made of: F. Chr. von Scheyb, Vienna 1753 (cf. fig 1); K. Mannert, Munich 1824; E. Desjardins, Paris 1869–74; K. Miller, Ravensburg 1887 (coloured version of the slightly revised edition by Scheyb); Weber, Graz 1976 (facsimile); Prontera 2003b (reprint of Miller’s version of 1887). Earliest photographs were published in 1888.
FIGURE 19.1 TP seg II (Scheyb 1753).
Due to palaeographical evidence, the present TP must have originated in the years around AD 1200. The latest antique manuscript and final editorial work are to be dated to ca. AD 435 according to Ekkehard Weber.\footnote{11} Minimal later additions probably entered the manuscript during the process of Medieval copying.\footnote{12} Statements as to the number of Medieval copying stages are impossible. The length of the entire rotulus before its separation into individual sheets was 6.75 m., the height of each sheet varying between 32.8 cm. and 33.7 cm.\footnote{13} On the left edge of the first sheet a somewhat wider margin stands out as does a thicker black vertical line at the beginning of the drawing. From this we may conclude that the copyist of around 1200 AD did no longer have access to the original beginning of the rotulus. It is quite likely that the missing start of the rotulus comprised two or three parchment sheets containing not only a praefatio but also the landmasses of Western Africa, Iberia, Ireland, Britain, and further islands in the Atlantic Sea.\footnote{14} Weber’s hint that the poem Anthologia Latina 724 Riese might possibly have formed part of the praefatio of the edition of 425 AD seems plausible:

\begin{verse}
Hoc opus egregium, quo mundi summa tenetur,
AeHora quo montes fluvii portus freta et urbes
Signantur, cunctis ut sit cognoscere promptum,
Quidquid ubique latet: clemens genus, inclita proles,
Ac per saecla pius, totius quem vix capit orbis,
Theodosius princeps, venerando iussit ab ore
Confici, ter quinis aperit cum fascibus annum.
Supplices hoc famuli, dum scribit pingit et alter,
Mensibus exiguis veterum momumenta secuti
In melius reparamus opus culpamque priorum
Tollimus ac totum breviter comprehendimus orbem:
Sed tamen hoc tua nos docuit sapientia, princeps.
\end{verse}

\footnote{12} Gautier Dalché 2003.
\footnote{13} Detailed information in Talbert 2010a, 74.
\footnote{14} Cf. the attempt at reconstructing the beginning of TP in Miller 1887; on this also: Talbert 2007. Weber 1976, 13 already suspected that Rome might have been placed in the centre of the TP so that some 2 m. would be missing at the beginning of the rotulus. Thus, the entire TP would have been 8.75 m. long.
The poem was conveyed by the Irish monk Duicul and dates into the year 825 AD.\textsuperscript{15} It confirms all known parameters of the process of copying: scribe and draughtsperson were different people (\textit{dum scribit pingit et alter}). At the same time, the famuli do not seem to have been experts. They either copied from a single original or perhaps compiled several ones (\textit{veterum monumenta secuti}). This and the fact that they made amendments themselves (\textit{reparamus opus culpamque priorum}) would help to explain various mistakes. It is also remarkable that chorographical aspects are mentioned explicitly (\textit{Aequora quo montes fluvii portus freta et urbes / Signantur, cunctis ut sit cognoscere promptum, / Quidquid ubique latet}), although information on a road network is lacking.

Further statements on the lost beginning are impossible due to the lack of source material.

4 Present State of Research on the \textit{Tabula Peutingeriana}

Ever since Christian von Scheyb’s work of 1753 (cf. fig. 1) the \textit{TP} has been in the focus of research, because it is the largest and best preserved map known from antiquity. In 2007 it was declared part of UNESCO World Heritage. Up to now it has been \textit{communis opinio} amongst researchers that it represents a Roman product.\textsuperscript{16} Thus, the \textit{TP} is testimony to Rome’s claim to power over the entire \textit{orbis terrarum}. Proof of this are \textit{e.g.} the large city vignettes of Rome and Constantinople, ‘towering’ above the entire \textit{orbis}. Ultimately, the discussion only varied in questions of detail.\textsuperscript{17}

In the following, a new approach to interpretation will be made plausible in renunciation of the previous \textit{communis opinio}: The \textit{TP} belongs into a chorographical tradition of cartography. Its archetype dates into Hellenistic times and, during the process of copying over the centuries, only its internal labelling has been adapted to new circumstances in different intensity and distribution.\textsuperscript{18} In contrast to this, the represented physical matrix of depicted space

\begin{footnotesize}
\begin{itemize}
\item \textsuperscript{16} Talbert 2010a, 149: ‘Altogether it is no surprise, therefore, that the Peutinger map should project Roman world rule, nor that this way should be projected as far east as India and Sri Lanka.’
\item \textsuperscript{17} Fundamental for discussion: Arnout 1988; Bosio 1983; Gross 1913; Kubitschek 1917; Kubitschek 1919; Levi, and Levi 1967; Miller 1887; Miller 1916; Prontera 2003b; Salway 2005; Talbert 2010a; Rathmann 2013a; Weber 1976; Weber 1989; Weber 2012.
\item \textsuperscript{18} Gisinger 1938, 1408–10 was the first one to raise the hypothesis that the \textit{TP} might have had a Hellenistic model, but abstained from formulating any further consequences.
\end{itemize}
\end{footnotesize}
surprisingly remained unmodified. This opinion can be justified by the following points:

1) The *TP* contains innumerable elements (mountains, regional geographical features, lighthouses, toponyms of rivers, lakes, islands, seas, and landscapes) that cannot be reconciled with an *itinerarium pictum* or the *cursus publicus*.

2) The concentration on plotted roads in combination with the coexistent marginalisation of all graphic-topographical elements means a severe constraint to the diversity of information contained in the *TP*.

3) The map presents numerous details irreconcilable with its dating into the Roman Imperial period. Pieces of information deriving from Hellenism are too numerous to be trivialised as anachronisms or anything else. However, the represented landmasses correspond to the state of information of the 3rd century BC.

4) In return, some aspects are absent although they would have to be expected in a cartographical illustration of the Roman Empire. This is all the more the case if the *TP* is to be considered in the context of Agrippa’s Map or to be interpreted as a Roman Imperial map.\(^{19}\)

Despite due brevity, it will be necessary to give my opinion on hitherto existing positions of a majority of researchers: (4.1) *cursus publicus*, (4.2) *itinerarium pictum*, and (4.3) Agrippa’s Map.

4.1 *The Tabula and the Cursus Publicus*

Some scholars consider the *TP* a product of the *cursus publicus*.\(^{20}\) According to this, the *TP* would have been a device of infrastructure measures taken by Augustus and designed to warrant communication between Rome and the provincial capitals. It would have served as an auxiliary means either for dispatch riders in practice or for the *praefectus vehiculorum* in general. However, this hypothesis is hardly plausible. Neither are not even nearly all *viae publicae* and provincial capitals plotted on the *TP* nor are the distances along the roads given in units of measurement that would have been reasonable for

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19 In addition, also a connection between the *TP* and the anonymous Ravenna Cosmographer or the *Dimensuratio provinciarum* or *Divisio orbis terrarum* respectively has often been suggested. In each case, the aim has been the placement of the *TP* in a Roman Imperial context. Cf. Weber 2005.

20 Talbert 1999, 304 with additional information.
the practical use of the *cursus publicus*.\textsuperscript{21} Even in combination with a written itinerary no horseman of the *cursus* would ever have found e.g. the *mansio*nes on the road from Rome to Antioch.\textsuperscript{22} For governmental instances, i.e. the *praefectus vehiculorum*, the *rotulus* with an original length of more than 8 m. cannot have been of any use either. There is a complete lack of any structural information or administrative hints required by the *cursus publicus*.\textsuperscript{23} It is obvious that the road network highlighted in red has caught the attention of researchers since von Scheyb and has thus blocked any view of alternatives.\textsuperscript{24} Altogether I have no intention of depreciating the relevance of the plotted roads and information on distances. They represent an absolutely vital source for research on *viae publicae*—but not on the *cursus publicus*.

\section*{4.2 Is the Tabula – an Itinerarium Pictum?}

Matters are similar to 4.1 with regard to the second seemingly secure cornerstone of *TP*-research: Its labelling as an *itinerarium pictum*.\textsuperscript{25} This hypothesis rests exactly on those roads highlighted in red including the mass of information on distances between the various places. Hereby, place vignettes of different sizes (555 labels) are supposed to have represented the different facilities of *mansio*nes.\textsuperscript{26} The decisive text document is derived from Flavius

\begin{itemize}
\item \textsuperscript{21} Quite unsystematic is the use of measurement units along the roads. Although, at Lugdunum, we find the remark that counting is made in leagues from there onwards [*TP* seg. I 5: *Lvgdvno capvt Galliar(vm) vsq(ve) hic legas*], we learn nothing whatsoever about the counting method in Britain, *Germania* or even in the areas east of the Euphrates River (pasarangs?). No antique traveler would have been able to find his/her way in this muddle of information on distances, particularly since they are sometimes assigned to the wrong road sections or completely lacking. These mistakes can hardly be blamed exclusively on the Late Antique and Medieval copyists.
\item \textsuperscript{22} Even if http://www.omnesviae.org/ (1.5.2014) does not comply with scientific requirements, this internet portal makes quite clear how restricted the information potential of the *TP* for travellers is.
\item \textsuperscript{23} On the *cursus publicus* see Kolb 2000.
\item \textsuperscript{24} Bosio 1983, 121–33; Weber 1984; Talbert 2010a, 108–122. Still completely bound to 19th century ideas is Dilke 1987b, 238: ‘The Peutinger map was primarily drawn to show main roads, totaling some 70,000 Roman miles (104,000 km).’ It is interesting that Kubitschek 1919b, 2135 remarked with regard to the representation of mountains, that the ‘Farbenwahl gewiß nur einen koloristischen, aesthetischen, keinen sachlichen Grund hat’, but at the same time did not realise that researchers were absolutely willing to attach importance to the signal colour red in the case of the plotted roads. Cf. Talbert 2010a, 97–8.
\item \textsuperscript{25} In Levi, and Levi 1967 Vegetius’ phrase even entered the book title. Talbert 1999, 303–4 and Mittenhuber 2009b, 42 also list the *TP* amongst the *tabulae pictae*.
\item \textsuperscript{26} Levi, and Levi 1967, 197–211.
\end{itemize}
Vegetius Renatus’s book *De re militari* (3.6.4) which was written around 400 AD. The term *itinerarium pictum* used therein has been transferred to the *TP* by researchers as a seemingly ideal *terminus technicus*. However, there have already been sporadic hints in the literature that Vegetius only referred to the use of drawn itineraries in a theoretical context of the achievements of particularly able military commanders. It is likely that Vegetius never actually saw such *itineraria picta*. Above all, as an *itinerarium pictum* the *TP* offers too little information regarding streets (passes, bridges, widths of roadways etc.) on the one hand and too many notes without a road context on the other hand. Additionally, it represents an *oikoumene* surrounded by the ocean, therefore has too large a scale and too little details and is hence unsuitable for the orientation of an army in the countryside, as imagined by Vegetius. The final and perhaps most problematic point about Vegetius’ term is that it is exclusively attested here. Consequently, it cannot be used as a *terminus technicus* for the *TP*.

4.3 *The Tabula and Agrippa’s Map*

First of all, it seems precarious that the existence of Agrippa’s Map can only be inferred from literary sources. Its shape and possible geographical-cartographical contents are debated controversially. This initial position already reveals the set of problems connected to a hypothesis that is supported by many researchers and according to which Agrippa’s Map was the prototype of the *TP*. For example it is not convincing that the elongated shape of the *TP* should go back to Agrippa’s Map fixed up on the walls of *Porticus Vipsania* on

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27 Primum itineraria omnium regionum, in quibus bellum geritur, plenissime debet habere per- scripta ita, ut locorum intervalla non solum passuum numero, sed etiam viarum qualitate perdiscat, compendia, deverticula, montes, flumina ad fidem descripta consideret usque eo, ut sollertiores duces itineraria provinciarum, in quibus necessitas gerebatur, non tantum adnotata sed etiam picta habuisse firmentur, ut non solum consilio mentis, verum aspectu oculorum viam profecturus eligeret. Cf. Brodersen 2003, 188.

28 Brodersen 2003, 188 with further literature; additionally Kubitschek 1919b, 2126–32.

29 It is striking that only a single entry of this kind exists, namely the road tunnel next to Naples (TP seg. v 4).

30 Brodersen 2003, 269–72 with an overview of all suggestions what Agrippa’s Map might have looked like.

31 On Agrippa’s Map cf. Arnaud’s contribution in this volume; see also Hänger 2007 and Arnaud 2007–2008; Talbert 2010a, 144. A connection between Agrippa’s Map and the *TP* has been supported *e.g.* by Gross 1913, 87, Levi, and Levi 1967, and Weber in all his publications. What is equally old as the attempt of creating a connection between *TP* and Agrippa’s Map is criticism of this procedure: Cuntz 1894, 587.
Campus Martius. Why should this Augustan world map not have been several metres high, comparable to the *forma urbis*? After all, we know the fragment of a marble city map from Via Anicia of the Julio-Claudian period which structurally resembles the *forma urbis* with its height of some 13 m.32 Another remnant of a marble city map comes from the Forum of Nerva and can be dated into 98 AD due to its find context.33 Plans or maps with a height of several meters were therefore generally familiar to urban Romans since the early 1st century AD. Thus, there is nothing to contradict the assumption that Agrippa’s Map might have been several metres high, too. The characteristic shape of the TP, in any case, has nothing to do with a supposedly elongated Map of Agrippa on the walls of Porticus Vipsania. With its shortenings and stretchings it is rather simply owed to the writing material, a parchment scroll.34

Additionally, there are also objections of content against a connection between TP and Agrippa’s Map demonstrating that we should not consider the TP a genuinely Augustan or Imperial-Roman product. Thus, it lacks *e.g.* the physical space of Germania including the Elbe River. This information would certainly have to be expected in an Augustan world map. After all, Augustus explicitly hints at the subjugation of Germania in his *res gestae.*35 In return, the Germanic tribal names of the Middle and Late Imperial period, seemingly added later on the narrow strip of land between the River Rhine and the northern oceanus, impressively document that Germania up to the Elbe River had not even been provided for at all on the TP (cf. fig. 1). In addition one should ask, why the areas east of the Euphrates River and all of Africa are mapped, although the majority of these zones did not belong to the Empire at all. Instead, an explicit hint as to the limits of Roman power can be found at the Euphrates River: ‘Are(a)e fines romanorum’ and somewhat below ‘Fines

32 Rodríguez-Almeida 2002, 43–9; Rosada 2007, 152–54; Talbert 2005. The fragment features a city section around Circus Flaminius including the Temple of Castor and Pollux (Vitr., De arch. 4.8.4).
33 Rodríguez-Almeida 2002, 61–66; Rosada 2007, 156.
34 As Kubitschek 1919, 2129 already remarked, there must have been a tradition of transferring drawn maps onto scrolls. After all, the oikoumene has been represented in a successful manner despite its many peculiarities. All shortenings and distortions seem to follow a certain method.
35 Augustus *Res gestae* 26. This is matched by Strab. 7.2.2 according to which the land up to the River Elbe was known to the Romans. Additionally, he points out that, in his time, there was sufficient geodetic data to generate an up to date image of the oikoumene (2.5.1). Since he unmistakably speaks of geodetic data, the objective of the activity described by him can only have been a map. Surprisingly, Rome’s territorial claim to Germania is left completely unconsidered by Talbert 2010a, 149.
exercitus syriatic(a)e et conmertium Barbar(um)). These remarks do not speak in favour of a Roman cartographical claim to world domination.

These points of criticism already demonstrate that the discussion about the dependence of the TP from Agrippa’s Map is not constructive. More probable with regard to the TP and Agrippa’s Map is the inverse image: The Map of Agrippa as the possibly first Roman illustration of the oikoumene belongs into a Hellenistic tradition of maps. The archetype of the present TP not only represents the probably older version due to the plotted landmasses, but it might consequently even have been a kind of model for Agrippa’s Map. This hypothesis is supported by the facts that—according to our present state of knowledge—Rome did not possess its own cartography until the beginning of the Principate and that a general transfer of knowledge is provable from Hellas towards Rome. So why should the makers of Agrippa’s Map not have resorted to a Hellenistic map, too? On this, compare the following diagram:

![Diagram of the sequence of maps from the archetype of TP to the Cartography in Rome](https://example.com/diagram.png)

**Figure 19.2** Archetype of TP (Courtesy of M. Herchenbach / M. Rathmann).

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36 TP seg. X 2; on this: Weber 2006b.

37 When considering the Agrippa fragments collected by Riese, GLM pp. 1–8, one can only agree with Brodersen 2003², 270 according to whom Agrippa’s Map did not necessarily contain roads.

38 Cf. below ch. 7.
New Approach to an Appraisal of the *Tabula Peutingeriana* with Regard to History and Content

In order to fully comprehend the *TP* including its significance and historical context, some aspects of antique cartography must be clarified first. This places the question in the centre, which types of maps were known in antiquity. In the following, proof will be provided for the existence of different types of maps, for which even special terms are found in the written sources.

My starting point is the research controversy mentioned before, which Janni had started by his study on antique maps and itineraries. To him, the expansion into the second dimension in the form of maps did not get beyond its initial stages. Thus, he challenged the traditional notion of widespread cartography as it has been communicated in reference books and articles of the *Realencyclopädie der classischen Altertumswissenschaft*.39 Kai Brodersen further sharpened Janni’s critical interpretation of the map material.40 In his view, maps in the modern sense were not used beyond a very small circle of cartographical geographers. He explains his hypothesis by the absence of a ‘concept of scale’41 which prevented the generation and distribution of maps suitable for everyday use.

Without intending to discuss the existence of antique maps in detail, one can at least point out—as was said at the beginning—that a synopsis of all existing sources definitely reveals a genesis of antique cartography from Anaximander and Hecataeus of Miletus to Claudius Ptolemy.42 On the whole, there is still want for a fundamental reappraisal of antique cartography and an answer to the question, which role maps did play in everyday life of people or amongst political decision makers.

What, however, is to be understood by an antique map? A first hint is provided by Ptolemy in the introduction to his *Handbook of Geography*.43 In this 2nd-century text, he introduces geography as a science with a twofold aspect.

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39 For example: Aujac 1987a; Aujac 1987b; Dilke 1987a; Dilke 1987b; Kubitschek 1919b, 2100. Cf. Brodersen 20032, 22–23.
41 Brodersen 20032, 289.
42 Stückelberger 2009; Rathmann 2013b.
43 1.1.1: Ἡ γεωγραφία μίμησις ἐστὶ διά γραφῆς τοῦ κατειλημμένου τῆς γῆς μέρους ὅλου μετὰ τῶν ὡς ἐπίπαν αὐτῷ συνημμένων· καὶ διαφέρει τῆς χωρογραφίας, ἐπειδή ἄυτη μὲν ἀποτεμνομένη τοὺς κατὰ μέρος τόπους χωρὶς ἑκαστον καὶ καθ’ αὐτὸν ἐκτίθεται, συναπογραφομένη πάντα σχεδὸν καὶ τὰ μικρότατα τῶν ἐμπεριλαμβανομένων, οἷον λιμένας καὶ κώμας καὶ δήμους καὶ τὰς ἀπὸ τῶν πρώτων ποταμῶν ἔκτροπας καὶ τὰ παραπλήσσα. On Ptolemy cf. Aujac’s contribution in this volume.
In doing so, he contrasts geography against chorography. To him, geography means cartography, which he understands as a method of representing the oikoumene to scal.44 To our knowledge, this cartography was exercised and advanced by an élite of scientists from Dicaearchus of Messana via Hipparchus down to Ptolemy.45 In all likelihood, it aimed at perfecting as realistic as possible a representation of the oikoumene which had begun with the Ionian maps of Anaximander and Hecataeus of Miletus46 and which the protagonists explained further by accompanying texts. The unity of image and word, as Stückelberger called it, survived from the beginnings of cartography to Ptolemy.47 To put it hyperbolically, one might dare the hypothesis that a map without accompanying text was not envisaged at all.

Interestingly enough, the two study branches of geography as quoted by Ptolemy are already mentioned by Strabo, who additionally referred to distinct map types for both (2.5.10; 2.5.17).48 The first passage by Strabo describes a representation of the world as much to scale as possible quite in the sense of Ptolemy’s cartography.49 The second quotation from Strabo introduces a chorographical cartography in contrast to this, which deals with the visualisation of regional geographical features.50 The circumscription of chorography chosen by Strabo resembles the one by Ptolemy and nicely matches, also in

44 Ptol., Geog. 8.1.2 and 5; Vitr., De arch. 1.2.2.
45 For the influences of astronomy cf. Geus’s contribution in this volume.
47 Stückelberger 1994. Since the times of Hecataeus (FGrHist 1 T 12 = F 36a, FF 37–369, cf. Hdt. 5.49) there seems to have existed a symbiosis of text and image. At the same time the limited potential, particularly with regard to height, of available writing materials (papyrus, parchment) is likely to have played an important role. Many pieces of information simply could not be fitted into the map and therefore had to be reserved for the accompanying text.
48 The term ὁ γεωγραφικὸς πίναξ is also found in Strab. 1.1.10; 2.1.2; 2.5.13. What remains to be investigated is, whether the linking of γεωγραφία und πίναξ as a more precise version of the older term περίοδος γῆς goes back to Eratosthenes. On chorography in Strabo see: Arnaud 2007–2008, 89–91; Prontera 2011b. Additionally, what remains to be discussed is, whether the term pinakographia as the terminus technicus for the graphic implementation of geographical information was also created by Eratosthenes (F III A, 11 Berger = Strab. 2.1.10).
49 2.5.10: Νυνὶ μὲν οὖν ἐπιγεγράφαμεν ἐπὶ σφαιρῆς ἐπιφάνειας τὸ χωρίον, ἐν ὧ φαμεν ἱδρῦσθαι τὴν οἰκουμένην· καὶ δεῖ τὸν ἐγγυτάτω διὰ τῶν χειροκμήτων σχημάτων μιμούμενον τὴν ἀλήθειαν ποιήσαντα σφαῖραν τὴν γῆν, καθάπερ τὴν Κρατήτειον, ἐπὶ ταύτης ἀπολαβόντα τὸ τετράπλευρον ἐντὸς τοῦτοῦ τιθέναι τὸν πίνακα τῆς γεωγραφίας.
50 2.5.17: Πλείστων δ’ ἡ βάλλεται γεωγραφεῖ καὶ σχηματίζει τὴν γῆν, κόλπους ἀπεργαζόμενη καὶ πελάγη καὶ πορθμούς, ὦμοιας δὲ ἱσθμοὺς καὶ χερρονήσους καὶ ἄκρας· προσλαμβάνοις δὲ ταύτη
other regards, the information we otherwise obtain of it in terms of descriptive regional studies. Of special interest is the fact that Strabo—unlike Ptolemy and all other sources referring to chorography—also explicitly knows maps of this country-specific type of geography. It can only be speculated that Ptolemy did not mention these chorographical maps, because to him they were no ‘true’ maps, but only geographical drawings in a wider sense. That Strabo unmistakably speaks of chorographical maps as a type of their own should not be doubted, because of the coupled terms of geography respectively chorography and pinax (ὁ χωρογραφικὸς πίναξ).

Into this discussion there also fits a passage by Vitruvius. In the context of his remarks on winds, rain, and river courses the architect claims in a somewhat confuse argumentation (8.2.6) that he had taken the information for this from a chorographical map (quae orbe terrarum chorographiis picta itemque scripta). For the understanding of this passage Prontera hinted at 8.2.8. Here, Vitruvius speaks of in orbis terrarum descriptionibus and thus makes clear that he is well able to distinguish between a graphic and a literary description of the earth. Therefore, when writing 8.2.6, Vitruvius must have had a map before him or at least must have taken mental reference to it.

What is decisive is that Vitruvius 8.2.6 provides us with a second proof—beside Strab. 2.5.17—of the existence of chorographical cartography. According to this, Ptolemy’s narrow definition of a map obtains conceptual extension: Chorography did not exclusively produce texts. Obviously the text was sometimes flanked by visual representations of the treated region, which—

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51 Cf. Prontera 2011b. To this we should add: Divisio orbis terrarum v. Terrarum orbis dividitur tribus nominibus: Europa, Asia, Libya. Quem divus Augustus primus omnium per choro-graphiam ostendit. Does the chorography mentioned here allude to Agrippa’s Map?

52 The συναπογραφομένη in Ptol., Geog. 1.1.1, in any case, does not exclude something drawn in the context of chorography, because of the γράφειν contained in it. This would be very unlikely from a semantic point of view if only because, in the previous sentence on geography, it signifies a drawing of the earth (Ἡ γεωγραφία μίμησίς ἐστι διὰ γραφῆς τοῦ κατελθομένου τῆς γῆς…). Cf. Prontera 2011b, 96: ‘Ai suoi occhi la chorographia è una pseudo-cartografia perché prescinde totalmente dai principi della matematica, che sola può rendere conto del rapporto spaziale fra totalità dell’ecumene e le sue partizioni.’


55 Prontera 2011b, 98.
according to Ptolemy (1.1.1) dealt with τὰ μικρότατα τῶν ἐμπεριλαμβανομένων, οἷον λιμένας καὶ κώμας καὶ δήμους καὶ τὰς ἀπὸ τῶν πρώτων ποταμῶν ἐκτροπὰς καὶ τὰ παραπλῆσια. It was not only the mathematical-physical branch of geography alone that aimed at producing maps, but also its neighbouring discipline of chorography. One reason that this literary information on chorographical cartography has not been appreciated by scholars until now probably lies in the fact that, hitherto, no compelling evidence demonstrated that such an independent chorographical type of map really existed in antiquity.

Since the 1990s we have a map-like graphic in the Artemidorus Papyrus (P.Artemid.) as our missing link.56 Besides the unfinished map-like drawing, the papyrus offers five columns of text as well as numerous drawings of animals and anatomic details. Originally the rotulus was designed to become the edition de luxe of a geographer. However, the copying project was abandoned in its initial phase for unknown reasons. The papyrus scroll itself was put to secondary use. Despite the fragmentary state of preservation, the author can be identified: It is the chorographical geographer Artemidorus of Ephesus. This results from a comparison of lines 1–14 of column IV in P.Artemid. with Artemidorus F 21 Stiehle. According to Marcian of Heraclea Artemidorus’ akme dated into the 169th Olympiad (104–101 BC).57 Thus the papyrus, which was written around 80 AD according to scientific analyses, confronts us with one of those renowned Hellenistic geographers.58

For our discussion, the large map-like drawing on the recto of the papyrus immediately left of text columns IV–V is of main importance. This orderly coexistence of chorographical text and cartographical map should probably be considered a deliberate unit. Unfortunately, the illustrator interrupted his work already in its initial stadium. However, we can still spot a sufficient number of reference points: The unfinished illustration provides single lines to be interpreted as streams or paths and double lines to be explained as roads or larger rivers. Additionally, geographical details such as mountains or a building (temple?) can be recognised, too. Large vignettes seem to represent towns and the numerous smaller squares vici or mansiones.59 Although the whole sketch became stuck in its beginnings, it resembles the structures of the TP. Another interesting fact can be derived from the comparison between P.Artemid. and

56 Gallazzi, Kramer, and Settis 2008. The debate on the authenticity of the papyrus may be considered settled: Hammerstaedt 2009; Marcotte 2010a; Rathmann 2011.
the TP: The representation of settlements by means of stereotype patterns (vignettes) seems to have been common usage in antiquity, because vignettes can also be found e.g. on the so-called shield of Dura-Europos, on the mosaic map from Madaba or on the surviving maps of Ptolemy in various manuscripts.\textsuperscript{60}

The crucial conclusion for our discussion is that works of a chorographical author such as Artemidorus of Ephesus apparently were equipped with maps for a better understanding of the text. Since Artemidorus definitely was a chorographer, the unfinished map on the papyrus obviously is one of those chorographical maps mentioned by Strabo and Vitruvius and circumscribed by Ptolemy. Thus, chorography not only intended to create a mental map in the reader’s mind, but occasionally offered tangible geographical sketches as an aid to imagination. These were mainly meant to provide a graphic idea of the discussed region with its essential physical features. Such maps did not serve for orientation in space, therefore were much inferior to itineraries and \textit{periploi} as to practical aspects, and consequently were less common. Also, they were lost much quicker in the reception process due to obstacles in the copying procedure.

The Artemidorus Papyrus in combination with the written sources introduced before makes quite clear that, beyond scientific to-scale maps as the ones by Ptolemy, people in antiquity also accepted maps with distortions and shortenings for visualisation in order to represent a desired area on the existing writing material. The crucial point was that the map was able to convey to the reader an image of the discussed region, beyond the text. Following Podossinov\textsuperscript{61} we should therefore distinguish three types of maps in antiquity:

1) Theoretic-scientific maps by mathematical-physical geographers, who were closely connected to astronomy (e.g. Marinus of Tyre, Claudius Ptolemy).

2) Maps illustrating a text in order to generate an idea of space, which must be called chorographical maps according to the facts mentioned before (e.g. map in \textit{P.Artemid}).

3) Religious-decorative maps, which first occurred in Mesopotamia, but also amongst Greeks and Romans in the shape of murals or mosaics and, once more, in the Christian Middle Ages. This last map type was not discussed here, because it clearly focusses on decorative aspects.


\textsuperscript{61} Podossinov 1993, 38.
6 The *Tabula Peutingeriana*—A Product of Chorographical Cartography

Now it will be my task to explain the significance of the newly defined map types and the chorographical map in *P.Artemid.* for the *TP*. The editors of the *editio princeps* of *P.Artemid.* already noticed that the map on the papyrus showed certain similarities with the *TP* without further commenting on this.\(^6^2\) Two questions still remain to be answered: Can the *TP*, detached from the earlier state of research, be attributed to one of the three just defined types of maps? How late can the archetype of the *TP* be dated?\(^6^3\) This second question will be discussed in chapter 7.

At this point, let us recapitulate the results already established: As could be demonstrated, the term *itinerarium pictum* derived from Vegetius is unfit for the *TP*. In contrast, the label ‘chorographical map’ attested by Vitruvius and Strabo provides us with a new *terminus* that can be used for maps in which an emphasis is laid on aspects of visualising space. The unfinished map sketch in *P.Artemid.* functions as an important missing link in the discussion about the applicability of this *terminus technicus* newly to be introduced into research.

The only difference between the unfinished chorographical map in *P.Artemid.* and the definition of a chorographical map in Strabo on the one hand and the *TP* on the other hand is, that the *TP* is no map of a so-called ‘middle-scale space’ but of the entire *oikoumene*. This produces a problem of definition because, in allusion to Strabo and Ptolemy, geography is meant to signify the cartographical mapping procedure of the earth (*ge*) and chorography the one of ‘middle-scale space’ (*chora*). The *TP* does not match this seemingly lucid scheme.

But is it really possible to draw the terminological borderline between cartography in the strict sense and its chorographical version so clearly, as was implied by Ptolemy in particular and—slightly moderated—by Strabo? Firstly, even Ptolemy knew mathematical-physical maps for middle-scale space, the twenty-six maps of countries.\(^6^4\) Thus, a cartographical mapping process of

\(^{6^2}\) Gallazzi, Kramer, and Settis 2008, 276–82.

\(^{6^3}\) Since it was exactly the fixation to this dependency that dominated the debate, no dating suggestion beyond the Augustan period existed either (= Agrippa’s Map; Weber 1976, 12). Talbert tried to interpret the *TP* with hardly convincing arguments as a product of the time of Diocletian (Talbert 2010a, 133–36; see also: Weber 2012). Cf. Albu 2008 and Salway 2005, 119: ‘It is impossible to determine a precise date or location for the creation of the archetype, but the cultural viewpoint embodied in the map is undoubtedly antique, Latin and western.’

middle-scale space also existed for him. In return, Vitruvius 8.2.8 speaks of a chorographical map representing the *orbis terrarum*. According to this, chorography was also by no means restricted to illustrations of ‘middle-scale space’. Therefore we should not be surprised that these differently ‘sized’ maps (*oikoumene* versus ‘middle-scale space’) not only existed in scientific cartography, but also in chorographical cartography. The decisive difference between the two manifestations of map production does not concern the question, whether the earth (*ge*) or ‘middle-scale space’ (*chora*) was plotted. It rather consisted in the question, whether the product was meant to meet scientific demands or whether the primary aim was the fundamental visualisation of space. We can pin down as our result that the *TP* can be termed a chorographical map without any terminological problems. Without doubt it was primarily meant to visualise space in the sense of Strabo’s definition.

For a differentiated understanding of chorographical maps the parallels of Artemidorus’ Map and the *TP* as well as the additional information in the text in *P. Artemid. (cols. IV–V)* are of interest. Taken together, both pieces of evidence illustrate what information could be supplied by a chorographical map. Both the *TP* and Artemidorus’ Map contain a road network as an internal structure, various town symbols of different size as well as topographical information. With regard to the traffic infrastructure of the *TP*, that had always been perceived as dominant, we can make the point here, that the visualisation of the road system obviously had already been common on chorographical maps of Hellenistic times. The geographical fixed points, borders, and nomenclatures mentioned in Artemidorus’ text (cols. IV–V), but not transacted in the drawing any more, can be found at many points of the *TP*. Thus, we are provided with topographical sites such as the altars of Alexander the Great at the eastern end of the *oikoumene*65 or chorographical information such as the names of landscapes. Furthermore, there are explicit notes at the Rivers Tanaïs (Don) and Nile saying that, in each case, they divide continents.66 Beyond that, there is a large amount of regional geographical features documenting that we are dealing with a chorographical map here.67

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65 Additionally, the two painted altars are inscribed with the following text; *TP* seg. XI 4–5: *Hic Alexander Responsvm accepit Vsq(ve) qvo Alexander*; cf. on this the parallel tradition in Arr., *Anab.* 5.29.1; Curt. 9.3.19; Diod. Sic. 17.95.1; Plut., *Alex.* 62.4. *TP* seg. X 1: *Ara alexandri.*

The entry probably refers to the altars of Dionysus mentioned in Curt. 7.9.15.

66 *TP* seg. VII 5—VIII 2: *flumen Tanaïs, qui dividit Asiam et Europam*; seg. VIII 1–4: *fluvius Nilus, qui dividit Asiam et Libiam*.

67 Selection: *TP* seg. X 2: *in his locis scorpiones nascentur*; seg. X 2: *Campi Deserti et inhabitabiles propter aqv(a)e inopia*; seg. VIII 1: *Desertvm v(bi) quadraginta annis erraver(vn)t filii
As the text in *P.Artemid.* (cols. IV–V) further attests, chorographical maps obviously could also possess a *pariplus*-like description of a coastline. On the *TP* at least one clue to this survives: In seg. V 1 at the Peloponnese we find the information *Traiectvs Stadior(vm) CC*. The two CC definitely must be interpreted as a specification of distance, because of the line above them, and probably refer to the distance between Boiai and the opposite island of Cythera. What also speaks in favour of a *periplus* inserted into the primary *tabula*, which was lost almost entirely in the copying process, are the two surviving lighthouses and the indication *Pirate* (sic) in seg. XI 5.

What remains to be discussed, is whether the *TP* was also provided with an accompanying text in a Ionian tradition as it had probably been common since the times of Hecataeus and was confirmed once more by *P.Artemid*. Without new discoveries in the future, no satisfactory answer to this will probably be found. A possible scenario might be a combination of the *TP* with a text similar to the one offered *e.g.* by Strabo.

### 7 Recent Research on the *Tabula Peutingeriana*

After the new terminological classification of the *TP* a second thought will now be dedicated to the problem of its dating. It will be demonstrated that the *TP* is based on a chorographical archetype of the time of Eratosthenes of Cyrene, which was enriched by diverse pieces of information in the course of its reception process involving numerous steps of copying until its ultimate revision in Late Antiquity—particularly in the Roman period and not equally for all regions. Since the *TP*, in each step of rejuvenation, was never completely and homogeneously modernised on all information levels, there consistently remained traces of the earlier version. Insofar, the *TP* contains different chronological levels in its present-day copy.

Let us start with the dating of the prototype of the *tabula*: The chronological classification of the primordial *TP* into the 3rd century BC or the period of Eratosthenes is generally—as has been indicated at the beginning—based
on the fact that the amount of depicted landmass corresponds to the state of knowledge of this period. The following six characteristics of the TP are typical of the cartographical image of the world in Eratosthenes’ times:

1. The Caspian Sea is represented as a gulf of the northern oceanus (cf. fig. 4).
2. The Taurus Mountains are an uninterrupted mountain range from Lycia through all of Asia.\(^{70}\)
3. The physical space ‘above’ the Rivers Rhine and Danube is almost completely absent (cf. fig. 1).
4. The eastern limit of the oikoumene is marked by the Altars of Alexander. Additionally, the ‘eastern fringe’ of the oikoumene represents the state of information of Early Hellenistic times (Megasthenes, Daimachus); (cf. fig. 4).
5. The shapes of India and Africa are identical with the ones attested for Eratosthenes (cf. fig. 3 and 4).
6. The oikoumene is completely enclosed by an oceanus.

With regard to Eratosthenes the following aspect may be added: The Mediterranean Sea and all other waterbodies are drawn in green. This unusual choice of colour has repeatedly been noted in the literature, but never been appreciated, although Egyptian sources universally called the Mediterranean Sea ‘The large green’ (\textit{wAD-wr}). The combination of these facts speaks in favour of an origin of the prototype \textit{tabula} in Egypt, possibly in Alexandria.\(^{71}\)

These clues may already suffice for the re-dating according to which the TP as a chorographical map is based on the state of information of the 3rd century BC. Thus, the primary \textit{tabula} dates into the period when, with Dicaearchus and Eratosthenes, first mathematical-astronomical influences on cartography became already noticeable and the information of the age of Alexander and of early hellenistic times generated lasting changes of the maps of the world, but when cartography in general still remained in a phase of revising Ionian cartography.\(^{72}\)

\(^{70}\) McPhail, and Hannah 2011/12.

\(^{71}\) The choice of colour might not be quite as arbitrary with regard to some aspects as Kubitschek 1919b, 2135 suspected. Cf. Talbert 2010a, 97–98.

\(^{72}\) For Strab. 2.1.34 = \textit{Heg}, 11 Berger, Eratosthenes was one of the decisive turning points in cartography. Although he does not specify what he means by the ‘older maps’, it is likely that he was thinking of maps since the days of Hecataeus of Miletus. A reminiscence of
might possibly have been visualised in the primordial TP unfortunately cannot be answered due to the loss of the beginning of our TP.

The chronological attribution of the archetype into the 3rd century BC allows some first conclusions. Firstly, it is now possible to give a reasonable explanation for the cartographical shape of the TP. Its being drawn on a parchment scroll (height of writing material!) indeed accounts for the massive distortions and shortenings, but not the amount of plotted landmass. In any case, the basic geodetic torso of the primary tabula remained almost unchanged over all stages of copying, only the internal labelling was adapted to new realities at many spots. The most bizarre case of retention of the cartographical prototype and simultaneous modernisation of the internal labelling is the entry Sera Maior for China in segment XI 5. Indeed the name was added at the eastern edge of the world, but without supplementing the corresponding geographical space in the drawing. As was mentioned before, the same is true for the added names of various Germanic peoples along the Rivers Rhine and Danube. Their names were written between the two major streams and the northern oceanus, but the correspondent settlement area was not included even rudimentarily. In fact, the copyists had selectively been informed on cartographical innovations, but due to deficient competence they were unable to adapt the cartographical setting to these new findings. Being simple copyists, they were only able to modify or supplement the labelling.

Ionian cartography in the TP might be the connection of Lake Maeotis (the Sea of Azov) with the northern oceanus by a waterway (TP seg. VIII 2).

Cf. Cuntz 1894, 591–96. The extreme stretching of the TP might perhaps also be connected to the fact that Eratosthenes himself described the oikoumene as a chlamys, i. e. an elongated Macedonian military coat (Strab. 2.5.6; 2.5.9; 2.5.14; 11.1.17).

As is implied by the more detailed representation of the Campanian Coast and the Bay of Split (Spalato), punctual improvements at most were possible in the drawn image of an area.


It would also be imaginable that no urgent interest existed in this since, ultimately, we are dealing with landmasses outside the Mediterranean oikoumene and thus outside the
FIGURE 19.3 Reconstruction of the oikoumene-Map of Eratosthenes (Courtesy of F. Mittenhuber / M. Herchenbach).
Additionally, the re-interpretation of the *TP* allows the explanation of different anachronisms and other inconsistencies of labelling. If we date the archetype roughly around 250 BC and final editorial work to ca. 425 AD and assume a copying process every 50 years, this would allow for some thirteen chronological stages. This means that copyists theoretically and practically had thirteen times the chance to implement modifications in the copying process. These intermediate time stages can be identified in the *TP* by the following aspects:

1. Gaul is still referred to by the name *Gallia Comata* (*TP* seg. I 3) well known from Late Republican days⁷⁷ and, close to Massilia, we find a probably even older hint as to the settlement of Greeks (*TP* seg. II 1: *Gretia* [= Graecia]), while Lugdunum received the remark, that from here counting was made in leagues (*TP* seg. I 5: *Lvgdno capvt Galliar(vm) vsq(ve) hic legas*).⁷⁸ This information cannot have entered a parent version of our *TP* before the mid 2nd century AD.

2. In *TP* seg. I 2 a copyist gave a hint at an older place name: *Gesogiaco qvod nvnc Bononia*.⁷⁹

3. We face a similar, although politically much more important case with the entries *Constantinopolis* (*TP* seg. VIII 1) and *Byzantini* (*TP* seg. VII 5-VIII 1). This doubling is an anachronism probably created in the copying process, after Constantine had chosen Byzantium as the new capital in AD 324 and had named it after himself.⁸⁰

4. The coexistence of the towns of *Stabios* (*TP* seg. V 5) and *Pompeis* (*TP* seg. V 5), destroyed by Mount Vesuvius in AD 79, and the sites of *Aqvileia* (*TP* seg. III 5) and *Ravenna* (*TP* seg. IV 1), represented as Late Antique residence towns with prominent town vignettes, is another case of entries from two different chronological phases.

5. The numerous names of provinces or countries come from quite different periods. Thus, the *Cotii Regnvm* (*TP* seg. II 3) incorporated into the Empire under the Julio-Claudian emperors is recorded as is the province

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⁷⁸ The hint *Lugduno caput Galliarum* is reminiscent of Strabo’s information on Agrippa’s road building measures in Gaul (4.6.11), but cannot be reconciled with counting by leagues since the early 2nd century AD. On this: Rathmann 2003, 20–22, 115–120.

⁷⁹ Cf. Flor., *Epit.* 2.30; *Pan. Lat.* 7.5; Eutr. 9.21.1; Cod. *Theod.* 11.16.5.

⁸⁰ Guidonis *Geographica* p. 136.3–6 Schnetz: *Bizantion quae nunc Constantinopolis est, urbs regia et insignis, nova Roma.*
of *Iepirvm novvm* (= Epirus nova; *TP* seg. VI 3–4) which was only established on the Balkans under the rule of Diocletian.

6. The four Christian notes probably belong to the youngest chronological stage of the *TP*: *AD S(an)C(tu)M PETRUM* near Rome (*TP* seg. IV 4) and *MONS OLIVETI* near Jerusalem (*TP* seg. IX 1) as well as the two entries on the Sinai Peninsula: *Hic legem acceperunt i(n) monte Syna* (*TP* seg. VIII 4) and *Desertum u(bi) quadraginta annis errauer(un)t filii isrl(is) ducente Moyse* (*TP* seg. VIII 5).

The bulk of the ca. 4,000 place names in the *TP* (only 555 of which possess a vignette) certainly will elude precise dating. But what is important is that future researchers will turn to the chronological classification of these toponyms—certainly also in combination with other datable information in the *TP*—in order to clarify the genesis of the *TP* from its archetype to its Late Antique final edition. An academic commentary on the *TP* is a desideratum of research in any case.

8 **Possible Owners or Users of the *Tabula Peutingeriana***

Last but not least we have to ask who might have been possible recipients of such chorographical maps at all. The few maps of the mathematical-physical geographers certainly remained within the scientific community.82 With regard to the maps of chorography with their audience appeal and visualisation of space there is a small, but possibly significant hint of Flavian times. For the year 91 AD Suetonius reports that Domitian had the senator Pompusianus executed because, amongst other accusations, he had a world map in his library.83 Beyond all topoi of tyrants, our interest focusses on the mentioned parchment map (*depictum orbem terrae in membranas*). Behind this, we may probably suspect a map in the shape of a scroll of the kind of the *TP*. Obviously, world maps were not completely unusual in libraries of Roman senators, so the text implies. Because it is only by the fact that such a possession was something quite normal, that the circumstance, that it could be turned into a charge of high treason, becomes a tyrannic act of Domitian. At the same time,

81 Weber 2006a.

82 As an example I would like to quote the map of Theophrastus, a pupil of Aristotle, which is explicitly mentioned in his will (Diog. Laert. 5.51).

Suetonius thus supports the aforementioned assumption that the expensive maps—little surprisingly—were in the property of socio-political élites. These groups not only possessed the necessary means for the installation of a library, but we can also impute to them some geographical interest, to which precisely Cicero bore witness.84 It is these élites who travelled a lot themselves on the one hand, and whom we may consider, due to their education, the recipients of geographical works in word and image on the other hand.85

84 Cic., Att. 2.4.3; 6.2.3 = Dicaearch. F 79 Mirhady. Cf. Eumenius’ allusion to a map in the School of Autun around 300 AD (Pan. Lat. 9[4].20.2)
85 My thanks are due to Irmgard Meyer-Eppler as well as Alfred Stückelberger, Michael Herchenbach and Janine Fries-Knoblach.
CHAPTER 20

Geography and Religion: The Lists of the Thearodokoi*

Emilio Galvagno

“For how could they do this? First of all they (the Athenians) have to hold more festivals than any other Greek city,” this statement from Ps.Xenophon’s Athenaios Politeia1 may be referring to the entire Greek world. Festivals took place in all the cities. Some of them acquired an importance that went beyond the confines of the polis to become important moments of religious contact and expression of all Greeks.2 Indeed, the festivals of Olympia in honour of Zeus, of Delphi for Apollo and Argos for Hera became pan-Hellenic, as did the regional festivals of Athens, of the Pantheon of Delos, of Plataea and many others of no lesser importance.3

Before the festivals part of the ritual was to send sacred messengers (theoroi) in time4 to invite communities to participate in the games. The designation theoroi, however, was given to both the delegates who announced the festival, and those who were indicated by the states or the cities to represent them officially.5 On reaching their destinations, the theoroi were hosted by the thearodokoi or thearodokoi, whose names in most cases are known to us thanks to epigraphic documentation. This latter term is used to indicate both those

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* The Dorian form is preferred for greater adherence to the epigraphic documentation.
1 Ps.Xen., Ath. pol. 3.2: “πῶς γὰρ ἂν καὶ οἷοί τε εἶεν, οὕστινας πρῶτον μὲν δεὶ ἑορτάσαι ἑορτὰς δὲς σοῦ ἐν Ἑλληνιδῶν πάλεων” (transl. Marchant).
2 Gehrke 2013, 40–41: 55.
3 Rutherford 2013, 77–79, to whom reference is made also for his other numerous works on the topic.
4 An Athenian inscription confirms that the Pythian messengers were sent to Athens in the month of Busios, i.e. six months before the beginning of the games (IG II² 1126; Syll.3 145; Daux 1949, 1.1). If this is plausible for the nearby cities, then it appears less likely for farther off cities such as the western ones. It would therefore be more likely that the festivals were generally announced one year in advance, as happened on occasion of the great Panathenaic festivals and for those at Epidaurus (Boesch 1917, 138 n.2; Perlman 2000, 72).
citizens who hosted the sacred delegates of the divinities, and those who were designated to represent their own state or city during the festivals. As well as Boesch 1908, 105–106; Robert 1938, 6, and Guarducci 1969, 350, more recently, Dillon 1997, 12; Perlman 2000, 13; 37–39, according to whom in its second meaning the term does not seem to occur before the end of the 3rd century BC; Rutherford 2013, 82–84.

Offering hospitality must have been a much sought-after function, because it had a religious value in that it was directed at the divine delegates. On the other hand, it is very difficult to establish the tasks of the thearodokoi. Indeed it seems very reductive to imagine that they were limited to only hosting the thearoi. Considering that some of them were eminent notables in the cities, such as Dion and Heraclid of Syracuse and the Ptolemaic functionary for the city of Karpasia on Cyprus or the Queen Cleopatra in Epirus, the hospitium could acquire a significance that was not only sacral, but also political. The thearodokos displayed in this way his influence and also took responsibility for providing lodging, board, transport and assistance to the sacred delegates for as long as they were in the city’s territory. It was also their duty to make a presentation to an assembly or to the magistrates of the city to render the epangelia public.

This function, not mentioned in the literary tradition, is known to us only epigraphically. Indeed five inscriptions have come down to us, found at different times and unequal in their composition, coming from sanctuaries and, therefore, linked to religious phenomena and elements. These inscriptions present lists in which alongside the indication of a city the names of people are transcribed. These documents have attracted a lot of attention from epigraphists and historians of religion, but the indication of places, that are more or less well known, has raised the problem of whether these lists can be useful for acquiring deeper knowledge of geographical data and, in particular, as to whether they constitute an itinerary. In any case these inscriptions have often been used in archaeological research for the identification of ancient sites. This necessarily raises the question of the relationship between some
sanctuaries and geographical knowledge. The most emblematic case would be the Delphi sanctuary, which tradition suggests was a guide for the Hellenics who intended to leave the motherland and to settle in far off places. Among the most significant cases we can cite Archias and Myskellos for the foundation of Syracuse and Croton, both of whom were at Delphi at the same time to have news of their destinations, and then there is the case of Battus for the foundation of Cyrene. This presupposes, naturally, that Delphi thus became a centre of geographical knowledge concerning the Mediterranean world. What Delphi’s contribution was to the consolidation of the “colonial” movement from the eighth century on is still a much discussed matter. Nevertheless, although considering that we are in the presence of a late formation of tradition, probably beginning from the sixth century, the central feature of the sanctuary goes beyond the religious element and it became an important point of communication and meeting of peoples from the entire Mediterranean Basin, including, as testified by the Herodotean episode regarding the Agyllei, the non-Hellenic populations.

In this context, analysis of the epigraphic texts related to the thearodokoi appears more complex, as these are documents useable for geographic knowledge of the Greek world. As happens with this type of documentation, the material available to us is necessarily incomplete, because chance has it this way and it will not be easy, even with the arrival of new acquisitions, to provide a comprehensive picture, also because in some cases reading presents serious difficulties. There appears to be no doubt that these documents follow a geographical principle of classification, characteristic of a periplus, and may represent road routes followed by the sacred messengers during the epangelia, presenting the cities visited in an order and in a geographic context. Nevertheless, although it has been observed that the Homeric catalogue of ships corresponds closely to the list of the Delphi thearodokoi, trying to establish whether or not it represents a series of real itineraries followed by the thearoi is still very problematic.

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14 Hdt. 1.167.1–2.
15 Siewert 2006, 48; Gehrke 2013, 47.
16 Cabanes 1976, 116; Perlman 2000, 39.
18 Perlman 2000, 31–32; Rutherford 2013, 73.
The inscriptions related to the *thearodoki*, which have come to us occasionally and not always integral, have been found at Argos, Nemea, Hermione, Epidaurus and, the most important because the longest, at Delphi.

To this lists perhaps others should be added, because single decrees have been found seeming to presuppose the existence of lists of *thearodoki*. This is the case of Lousoi in Arcadia that had instituted a festival in honour of Artemis Hemera, and from here there are five decrees relating to the concession of *proxenia* and *thearodokia* to five personages from Charadros, two from Kyparissia, one from Pharai and, perhaps, one from Orchomenos. These documents, datable to between the end of the fourth and beginning of the third century, would suggest that these cities too had sent *thearoi*, who had visited the regions of Messenia, Achaea, Ozolian Locris, probably reaching as far as Aetolia, Acarnania, Epirus and to the even further Pamphylia and Troad. The same situation can be hypothesized for Samothrace, Cos, Delos and other festivals, although it is highly likely that not all the centres in which games took place felt it was useful to publish such lists.

Despite the fact that the institution of the *thearia* surely dates to the archaic period and the oldest manifestation is found at Olympia in the period when the sanctuary was under Pisatis, the epigraphic documentation belongs to the fourth century and, with the exception of Delphi, up until now comes exclusively from the Peloponnesus and, more specifically, from Argolis, even if the first document known to us relating to the *thearodokia* was found at Olympia and regards an honorary decree for Kleandrus and Sokles of Sikyon datable to 365–363, declaring them *proxenoi* and *thearodoki*. All the lists that have come down to us are certainly characterized by a geographical criterion. Generally the name of the city or the state was inscribed, followed by the name or names of the *thearodoki*. At the beginning of the

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21 Perlman 2000, 158.
22 Perlman 2000, 160.
25 Perlman 2000, 175.
26 Very often a single personage carried out both functions. On the related problem, Perlman 2000, 20–21.
27 Most recently, Gehrke 2013, 47.
list the region visited by the sacred messengers is specified: thus in the Argos inscription, at line 20 we have [Ἐν Πελοπ]οννάσωι καὶ Κεφαλλανίαι; in that of Epidaurus in line 1 Θεαροδόκοι ἐπʼ Ἀκαρνανίαν, which is followed at l. 8 by Ἀκαρνανία.²⁹ The same happens with the big list from Delphi, belonging to the end of the third century, which always has the list of the cities preceded by an indication of the region and where the sequence of the names of the poleis could lead us to think of an itinerary.³⁰

Of the Peloponnesus lists that have come to us so far the oldest seems to be the one from Epidaurus, whose games—uncertain in origin—were certainly active towards the end of the sixth century, as testified by some Pindaric compositions.³¹ These games took place in the period between the end of spring and the beginning of the summer³² in honour of Apollo Maleatas and his son Asclepius, but they took the name of Asclepieia. This could lead us to believe that the paternal divinity was introduced in a co-titular fashion only subsequently.³³ Up until now two lists of thearodokoi have been found, dateable to around the mid-fourth century, precisely between 360/59 and 356/5.³⁴ The presence of the city of Datos (l. 32), founded by Callistratus of Aphidnae in 360/59 and which became Philippi in 356, constitutes a very precise chronological limit, that finds confirmation in the mention of Dion and Herakleidas as thearodokoi in Syracuse (ll. 39–40), who after the exile ordered by Dionysios 11, returned to their city in 357 and 356 respectively. To this should be added the mention of Terina (l. 45), in Magna Graecia, destroyed by the Bruttii in 335, while the citation of Cassandreia (l. 41), founded by the Macedonian king Cassander in 316 on the site of Potidaea, testifies to the fact that the original list was subject to addenda or revisions,³⁵ as is also indicated by the three references to Sicily and the second citation of Syracuse (l. 61), where the thearodokoi are the

²⁹ IG IV 2. 1, 94/95.
³² On the question, most recently, Perlman 2000, 87–95.
³⁵ Sève 1993, 308; the addenda appear to belong to three distinct phases and to three different inscribers and extend up until 340/38, Perlman 2000, 78–80.
unknown Aristarcus and Glaucus, who substituted Dion and Herakleidas on their death. There seems to have been no addendum made, however, after the fourth century.\textsuperscript{36} Connecting the institution of the \textit{theardokia} to Epidaurus with the reconstruction work on the temple around 370 even with the aim of soliciting a contribution appears to be very problematic.\textsuperscript{37}

We should add a third inscription to these two,\textsuperscript{38} carrying twenty decrees, of which eleven regard the concession of \textit{proxenia} and \textit{theardokia} and only nine of \textit{proxenia}. This, dateable to the third century\textsuperscript{39} and relating to single decrees conceded over a timespan of seventeen years, cannot be considered here because it follows no geographical criterion. Addenda and concessions by means of single decrees, which are at some one hundred years’ distance from the previous inscriptions,\textsuperscript{40} are evidence of the fact that the lists were inscribed on long-lasting material only on exceptional occasions.

The two epigraphs are in some way related, because they present two complementary routes. In the first the \textit{thearoi} visited Megara, Athens, Boeotia (Thebes, Thespiae, Koroneia, Orchomenos, Lebadeia (?)), Thessaly (Pelinna, Pharkadon, Adrakos, Gyrtion, Larissa, Homolion), Macedonia (Pydna, Methone), Chalcis and Thrace (Aineia, Dikaia, Potidaea, Kalindoia, Olynthos, Apollonia, Arethusa, Arkilos, Amphipolis, Berga,\textsuperscript{41} Tragila, Stagirus, Akanthos, Stolos, Aphytis, Skione, Mende, Neapolis, Abdera, Maroneia, Ainos, Thasos and Datos). There are then some addenda of cities, including Petaliai (Euboea), Pythion (probably in Perrhaebia), Cassandreia (Chalcidice), Ormenion (Thessaly), Ainos, which, being addenda, cannot be taken into consideration in establishing whether these are itineraries. Indeed, if for the settlements mentioned up until Macedonia it is possible to maintain that we might be in the presence of an itinerary,\textsuperscript{42} this appears difficult with regard to Chalcidice and Thrace, where, for example, Dikaia, near Maroneia, is instead mentioned as being near Potidaea and the same observation can be made for other settlements. If this is an itinerary, then it is truly a contorted one.

\begin{itemize}
\item \textsuperscript{36} Perlman 2000, 80, according to whom two addenda should be dated to 340–338; a third to shortly after 316.
\item \textsuperscript{37} Regarding this question, Perlman 2000, 68–73, according to whom any relation is chronologically unlikely.
\item \textsuperscript{38} IG IV\textsuperscript{2}. 1, 96.
\item \textsuperscript{39} For Guarducci 1969, 351 the epigraph should be dated to the first half of the third century; for Sève 1993, 308 to the mid-second century.
\item \textsuperscript{40} Sève 1993, 307; Perlman 2000, 88.
\item \textsuperscript{41} On the identification of Berga with Neos Skopos Serron, Bonias 2000, 235.
\item \textsuperscript{42} Perlman 2000, 74.
\end{itemize}
In the second they visited Corinth, Delphi, Amphissa, Oianthea, Naupactos, Calydon; then the Acarnania (Oiniadai, Stratos, Phoitiai, Koronta, Medion, Astakos, Euripos, Thyreion, Echinos, Torybeia,43 Alyzeia, Leukas, Palairoi, Anactorion, Pandosia, Cassope, Ambracia, Argos),44 Thesprotia with Poionos, Corcyra, Epirus, which in the list, however, comes between Anactorion and Pandosia, (Chaonia, Artichia, Akripos), where we find the generic Molossia, Aetolia (Hyporeia,45 Therminea, Phyleia, Proschon). They then proceeded to Syracuse and then, on the return road, through southern Italy with the cities of Locroi, Croton, Thurii, Tarentum, Terina.

There then follow the addenda relating to Sicily (Syracuse, Leontinoi, Katana), Epirus and again Sicily (Messana, Gela, Akragas). In this list the cities of the Peloponnesus, the Hellespont and Asia Minor are missing. This is probably due to the state of the epigraphic finds, as can be deduced from the third inscription, in which citizens of Megalopolis, Cyme, Cydonia, Phalasarna, Lacedaemon, Aigai, Berea and other cities46 are recognized as thearodokoi, cited in a sequence that does not present a geographical order, because the document regards the concession of the thearodokia, often accompanied by the proxenia,47 carried out at a different moment with criteria motivated by religious and political matters.

The Epidaurus list seems to follow directions that in some parts could suggest a sequel to an itinerary.48 Nevertheless, the position of Terina, a southern Italian city located on the Tyrrenian coast, mentioned after Lokroi, Croton, Thurii and Taras, leads us to think that the sacred messengers carried out an unlikely backward journey across the Straits of Messina. Furthermore, the sequel of Acarnania, where Medion is found strangely between Koronta and Astakos, remains difficult to understand, because an itinerary would have suggested a mention between Stratos and Phoitiai.49 The arbitrary nature of the sequel of the Acarnanian cities has led to the thought that, though following

43 Tyrbeion according to Perlman 2000, 120.
45 Probably on the border between Epirus and Aetolia.
46 In this order: Tegea, Taucheira, Argos, Crete, Alea, Cleitor, Pheneos, Pellanes, Pergamon, Messene, Phlius, Derion, Thera, Heraia, Aegina, Cos, Corinth, Stymphalos, Megara, Mantinea, Chaeroneia, Thespiae, Tanagra, Cnidos, Troezen, Plataea, Kallion, Astypalaia, Cardia, Lampsacus, Cyprus.
47 IG IV², 1, 96.
48 Perlman 2000, 74.
49 Corsten 1999, 74–75.
a geographical order, the list may correspond to districts rather than a true itinerary.\textsuperscript{50}

The lists of Argos and Nemea are not much later.

The Argos list, found in 1953 and whose editio princeps is owed to Charneux,\textsuperscript{51} is to be placed chronologically during the reign of Alexander the Great. In it Queen Cleopatra is nominated as thearodokos of Epirus: daughter of Philip \( \text{II} \), she was given in marriage to Alexander the Molossian who in 334, called by the Tarantinians, left his wife as regent and went to Italy, where around 331/0 he died at Pandosia. In 325 the regency was taken by Olympias.\textsuperscript{52} Nevertheless, it seems that Cleopatra became regent in 330 until, in 324, she was substituted by her mother Olympias.\textsuperscript{53} This would indicate a slightly earlier dating.\textsuperscript{54}

This list is inscribed on two columns. The first begins with the cities of Acarnania,\textsuperscript{55} followed by Epirus with the city of Phoenice, and then Corcyra, Apollonia and then jumps to Cyrene. There then must have been the list of the Peloponnesus cities and the island of Cephallenia, on which the state of the stone does not allow us to suggest any integration. The second column carries the list of the Micrasiatic cities,\textsuperscript{56} to which another list was subsequently added, incomplete due to the condition of the stone, of the cities of Arcadia.\textsuperscript{57}

To these places other notes from single decrees should be added.\textsuperscript{58}

It appears unlikely that the Argos list corresponds to a true and proper itinerary. Miletouteichos is mentioned before Iasos, which are followed by Cyme and Tenedos.\textsuperscript{59} In the sequence some important places such as Priene,
Samothrace, Lemnos and Imbros are inexplicably absent.\textsuperscript{60} If the absence of the two islands can be explained by the fact that they were held to be Athenian, that of Samothrace can only be attributed, but with some difficulty, to the state of the stone, the political situation of the city, or the recording of itineraries carried out contemporaneously by sacred messengers.\textsuperscript{61} Finally, the mention of Cyrene after Apollonia remains certainly inexplicable even if we are dealing, as is likely, with an addendum.\textsuperscript{62} In any case the current state of the inscription would seem to indicate that the lapidary or the lapidaries were not organized by sequels of itineraries followed by the \textit{thearoi}.

The list found by Miller in 1978 and published by him some ten years later\textsuperscript{63} belongs to the same period, to be dated probably to the period between 324 and 313,\textsuperscript{64} coming from Nemea, where the games in honour of Zeus\textsuperscript{65} had taken place since the Archaic period.

The presence of the \textit{thearodokoi} Diocles of Palairos, in Acarnania, Daimenes of Leukas and the Corcyran Aischrion\textsuperscript{66} in both the Argos and the Nemea inscriptions, confirms that the two lists are linked. Perlman has affirmed, therefore, that the Nemea list became a sort of partial updating of the Argos list, which was almost certainly the main one, and that it was a supplementary list.\textsuperscript{67} According to Charneux instead, this was the same decree transcribed for both the Nemean games and for those in honour of Hera. The only difference between the two lists is a chronological one.\textsuperscript{68} Almost certainly from the annexation of Cleonae by Argos, the dating of which is very problematic,\textsuperscript{69}

\textsuperscript{60} Charneux 1966, 234.
\textsuperscript{61} Perlman 2000, 104.
\textsuperscript{62} Perlman 2000, 100.
\textsuperscript{63} Miller 1988, 148.
\textsuperscript{64} Miller, \textit{ad loc.}, dates it to 323/2, but for a chronology at 315–313, Perlman 2000, 149, according to whom the addenda should be dated to a period not after 280; nevertheless, Knoepfler 2001, 190, on the basis of Aristono’s identification of col. B l. 24 with a person- age from the \textit{entourage} of Alexander the Great, tends towards a dating between 320 and 316/5, followed by Strasser 2007, 343, who considers 319–317; for a dating between 314/3 and 311/0, Corsten 1999, 90.
\textsuperscript{65} Tradition has the beginning of the games as being around 573, Perlman 2000, 131 n.138.
\textsuperscript{66} Respectively Col. I ll. 5, 8 and 13 in the Argos list; col. I l. 17 and col. I l. 17 and col. II ll. 6 and 4 in the Nemea list.
\textsuperscript{67} Perlman 2000, 150.
\textsuperscript{68} Charneux 1987, 412.
\textsuperscript{69} Perlman 2000, 132; 138–149. Cleonae remained independent until the late fifth century; but on the annexation of Cleonae by Argos at the beginning of the fourth century, Kritzas 2006, 427–429; for a dating of the merging of Cleonae and Argos to the late fourth century, before 323, Strasser 2007, 336–338.
the games came to experience a sort of unification. From 315 there are single decrees that testify, however, that the concession of the *thearodokia* came about both for Zeus at Nemea and for Hera at Argos, even though it cannot be excluded that this custom actually dated to some considerable time earlier.70

The Nemea list was also inscribed over two columns. In column A cities of Cyprus71 are mentioned, the island of Seriphos, followed by the cities of Acarnania;72 in column B there are Corcyra, Leukas, Macedonia73 and Hellespont.74 In fact only Lampsacus belongs to this last region, while Stratos and Eretria are completely out of place, especially if the latter is the Euboean one.75 Nevertheless, as some coin findings in Nemea testify, many of these cities in the list have left traces of their presence at the games.76

A singular case is provided by the list, the latest among the Peloponneseus, found at Hermione,77 a city of Argolis that was not secondary, bordering to the north with Epidaurus and Troizen. The inscription, which, unlike the other lists, first carries the names of the *thearodoki* and then the city’s provenance, seems to belong to the last quarter of the third century and was probably linked to the games in honour of Demeter *Chtonia*,78 whose effigy was found on the city’s coins, when in the period between 350 and 322, the city seems to acquire greater autonomy. The games of this city could not really be compared with those of nearby Epidaurus. The cities mentioned in the inscription—Troizen, Argos, Phlius, Corinth, Pellene, Aegina, Aigion, Dyme and Thelpousa, to which Messene and Tegea have been added on the lateral side—do not go beyond the borders of the Peloponneseus.

This list not only follows a geographical order, but it seems to have the sequence of an itinerary. This conclusion would seem to be obstructed by the mention of Aegina, inserted between Pellene and Aigion. Since the inclusion of the island would seem to have been made by a different hand,79 we

70 Perlman 2000, 99–100; Strasser 2007, 343.
71 Salamis, Kourion, Soloi.
72 Palairos, Anactorion, Echinos, Thyreion, Eupisos, Limnae, Oiniadai, Stratos, Derion, Medion, Phoitiai, Koronta and Astakos.
73 Amphipolis, Lete, Allante.
74 Lampsacus, Cyme, Stratos, Eretria, Notion and the island of Chios, which, with the exception of Lampsacus, do not form part of Hellespont.
75 Knoepfler 2001, 189 n.538: according to whom there is no geographical order, because the Eretria in question is the Euboean one, not its Thessalian namesake.
76 Knapp and Isaac 2005, 45.
77 IG IV. 727.
78 Perlman 2000, 162–166.
79 Perlman 2000, 161.
cannot exclude the possibility that we are in the presence of an oversight with a subsequent error by the inscriber. If, however, as would seem to be the case from the sequence present in the list, we follow the scheme of an itinerary, we notice that between Pellene and Aigion there is the city of Aigeira, which must have appeared in the Delphi list, as is confirmed by an inscription, and that it received the *thearoi* of Cos, both inscriptions are almost contemporary with the list of the city of Argolis.\(^{80}\) If, as seems likely, we were to suppose the presence of Aigeira instead of the more famous island, albeit very brief, the Hermione list then constitutes a true and proper itinerary.

In this context the most important document, even in terms of its length, is the one from Delphi, where the Pythian games were held, as sung by Pindar. After escaping the danger of the invasion of the Galatians in 278 the games were called *Pythia* and *Soteriai*.\(^{81}\) Indeed, in the sanctuary, which together with the Olympia sanctuary constituted the most famous pan-Hellenic centre from the religious and historical point of view, three lists have been found relative to *thearodokoi* belonging to three different periods and which therefore permit an analysis from both a synchronic and a diachronic viewpoint.

The oldest, published by Pomtow and then revised critically by Daux, is inscribed on a cippus and may date to the mid-fifth century.\(^{82}\) Comprising just 16 lines, it regards both cities in the Peloponnesus, in particular from Achaea and Arcadia, and cities in the Boeotia. The most recent, a very fragmentary marble stele inscribed on two sides and dating to the mid-second century, must have formed part of a list of which only 33 lines can be traced, 14 on one side and 19 on the other. Regarding the first side we can only state that it must have indicated cities of Macedonia; on the second we can certainly read the cities of Epidaurus, Buthroton, Arsinoe, Ktimene and, almost certainly, Assos. As noted, this document presents no regional unity.\(^{83}\)

The most important of these lists is certainly the second one, because it is the longer and is therefore known as the “big list”, and is composed of four columns on the main side and a fifth inscription on the left lateral part with a

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80 FD III: 4, 419; SEG XII 371, 41–57 dated respectively to 251/0-249/8 and 242, not very distant from the chronology of the Hermione list.

81 The founding of the new games should be dated between 276 and 260 (most recently, Sanchez 2000, 305) annually (Nachtergael 1977, 241–243) or triennial (Knoepfler 1995, 152–153) to then become pentennial in 246 (Nachtergael 1977, 265–266) or in 248 (Sanchez 2000, 307).

82 Daux 1949, 5 who corrects the chronology of Pomtow 1918, 1, who dated it to around 420.

83 Daux 1949, 27–30. But this scholar had given some indications in his work on Delphi of 1936, 17 n. 2.
total of 650 lines, not all legible due to fractures. It carries the names of some 300 cities, big and small, covering almost the entire Mediterranean Basin, from southern Gallia to Syria. The many fragments from the terrace of the temple were found and published in various periods up until the publication edited by Plassart in 1921, which, despite new finds and numerous subsequent integrations, which it is not possible to deal with here, still constitutes the basic text.84

Fixing the chronology of such a document with any certainty appears somewhat problematic—above all in the fifth column it has had successive addenda made to it. The attempt is therefore made to establish at least a date for the initial inscription, which has waivered between the last quarter of the third century and the first quarter of the second century.85 The bulk of it does not allow, therefore, dealing here with the notable problems that it presents, also because the inscription almost certainly must have contained mention, albeit with some “oversights”, of almost all the Greek centres of the Mediterranean world.

As in the other documents, here too there is an indication of the region they came from before the list of the cities that had hosted the theaoroi. For this reason the inscription is very useful for the identification of many towns in ancient Greece, even if not for all those mentioned in it. In this scheme it begins with the eastern Mediterranean, in particular with the cities of the island of Cyprus, which must have been followed, as can be deduced from the mention of Aradus on the Syrian coast, the only legible city between lines 10 and 26,86 the list of the cities of the opposite coast. There then follows the Ionian district with the cities of Euboea87 followed by Andros, perhaps Tenos,

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85 For the last twenty years of the third century, Nikitsky 1902, 35; Daux 1949, 21–24 proposes 235-221 as a chronology; for a dating around 220, Rougemont 1992, 190; Hatzopoulos 1998, 1193; around 220, Oulhen 1998, 224, followed by Rutherford 2013, 73; for the first quarter of the second century: Syll² 90; Pottow 1918, 4; Plassart 1921, 41; Robert 1939, 156; Id. 1946, 514; Rigsby 1986, 355–356; Tausend 1999b, 302; Manganaro 2003, 134: between 220 and 167.


87 In col. I l. 31 we read ἐν Ἀθῆναις, which, despite some perplexity and bearing in mind the regional scheme, almost certainly this is not Athens of Attica, but Atenae Diades in northwestern Euboea, known to us from epigraphic and literary sources (Bousquet apud Daux 1949, 20 n.1). If this is the case, it is difficult to suggest that the list follows an itinerary (Daux ad loc.).
Cythnos,88 Ceos,89 Cos and the cities of Caria with the insertion between Bargylia and Caunus of Iasos and Cnidos, which are not Carian.

The reading of lines 58–75 of column I was made possible thanks to a new find, published by Robert and picked up on by Daux.90 In this new fragment there are Microasiatic cities,91 followed by those of Lydia,92 Aeolis, Mysia and Troad. At lines 99–130, because of a fracture in the stone the names of the cities are not legible.

As can be deduced by the mention of Heraclea,93 Chaleion and Ipni in the first 15 lines of column II, there must have been here the list of the cities of the Ozolian Locris or a nearby district. Although there is an interruption of many lines due to the state of the stone, there follows the list of the cities of Boeotia, Peloponnesus and the southwestern islands.94 The mention of the Boeotian Plataea between Doureon95 and Phrixia and Tanagra between Tritaea and Crane appears very strange in this list. The last two lines, in which Orchomenos and Chaeronea are repeated, could be addenda. Pharai and Helice, present in the fifth century list, are absent, but they could have been in the lost lines. In any case the order of the sequence makes it unlikely that this can be explained as an itinerary.96

In the third column the list continues with four Arcadian cities, followed by those of Thessaly and Macedonia.97 The sequence of the cities in some cases could suggest an itinerary. Nevertheless, some cities would be off the route: Sciaathos (an island just above Euboea) and the Euboean Oreos, which

88 Daux 1965, 661.
89 On l. 38 Plassart read Κορη[σίαι. But Daux 1965, 660 felt the reading should be the name of the city of Κάρθαια.
90 Robert 1946, 511–522; Daux 1949, 18.
91 Among these we find Oroanna mentioned, a city that was otherwise unknown, which Robert 1946, 521, believes to be an erroneous form of Oroanda of Pisidia, but which according to Mannucci 2005, 112 is the Hellenistic name of Kyrbisso, to locate near the present-day village of Orhanli.
92 Col. I D (a) l. 1 Plassart 1921, 48 believing that Sardi must have been at l. 127 integrated with [ε]|ν Σ[αίς], corrected to Σ[αίνια] by Daux 1949, 12 and by this scholar (Daux 1965, 659) then integrated with Σ[αίνια] by Daux.
93 Plassart 1921, 48 n.9 considered it Heraclea Trachinia.
94 A new reading, albeit partial, in Jacquemin 2012, 229, which presents readings different from those of Plassart: l. 24 Thebes instead of Kopai; l. 32 Corinth recurs, absent in Plassart.
95 Almost certainly the Messenian Dorion, Plassart 1921, 50.
96 Tausend 1999b, 302.
97 For a comment on this part of the list, most recently, Pilhofer 2009, 956–970.
are found between the Thessalian Gonnoi and Homolion and, furthermore, Ichnae, Thessalonica, Neapolis. Above all the sequel Lysimacheia, Bisanthe, Perinthus, Byzantium cannot justify its being considered an itinerary.98

If we exclude a list of cities related to Thessaly, Aetolia and eastern Locris, situated at the end of the third column and which certainly constitutes addenda or complementary lists,99 the Crete list, inscribed at the end of the third and the beginning of the fourth column, could instead lead us to think of an itinerary, which, after the Cythera leg, leads from West to East. This then continues through northern Africa to begin again, due to the fracture in the stone, with the list of cities that go from Acarnania to Phocis, Epirus,100 Aetolia. Among these, however, are found Massalia and Elea, whose position could find a justification as an addendum following an erasure.101 The position occupied by Laodicea also proves incomprehensible if we are to identify this city with the Syrian one.102

There follows the western part of the Mediterranean with Corcyra, Magna Graecia and Sicily. The order of the Siceliot cities perhaps leads us to consider a precise road route.103 With these presuppositions the attempt was made to integrate lines 111–114, in which in some cases only the initial letter of the city104 can be read, which has resulted in various attempts to identify the cities. In this part of the list in any case the absence of important cities such as Metapontum, Croton, Thurii, Henna, Agyrium is puzzling, while less important cities, such as Helorus and Taisia, do appear. This makes an explanation that is founded

98 Plassart 1921, 55–56; Pilhofer 2009, 958.
99 Jacquemin 2012, 231.
100 Here probably the interval in the mention of Dodona and Phoenice is due to two moments of inscription, Gauthier 1979, 126.
102 Plassart 1921, 66.
104 For l. 111, where only the initial M can be read, Manganaro 1964, 436 integrated with Mytistraton, because Morgantina would involve a movement backwards along the route followed. Facella 2006, 193 instead thinks of the latter city. For l. 112, where the initial letter is a K, various solutions have been proposed including Kephaliodion, Kale Akte and Kapition, the latter has met with greater approval, Manganaro 1996, 136; Facella 2006, 194. Between Kapition (?) and Halaesa at least another two cities must have been visited, of which it is not possible to read even the initial letter. Regarding the suggestion that we are here in the presence of an itinerary some hypotheses have been made for the sequence Kapition-(Amestratus)-Kale Akte–Halaesa (Manganaro 1996, 137) or Kapition-Herbita-(Amestratus)-Halaesa (Facella 2006, 195) which, if the premiss were ever disproved, would be mere exercises.
only on political motivations very problematic. It therefore appears extremely difficult to define the criterion adopted by the thearoi in the epanghelia at the different cities. Finally, in the fifth column, we find some addenda that seem to indicate the renewal of the thearodokia or the change of the thearodokoi and therefore these prove ineffectual in terms of establishing an itinerary.

Nevertheless, as can be deduced from the two decrees relative to the cities of Brundisium and Ancona, other cities probably figured in the Delphi list. This would lead us to believe that the lists that have come down to us are not complete, as some decrees relative to the concession of the thearodokia to cities that are not present in the lists would seem to confirm and as the list of concessions of proxenia and thearodokia in an inscription of Epidaurus attests. Probably there was not always an updating of the lists.

These documents represent in any case an indispensable instrument for the regional geography of Greece and the Mediterranean inhabited by the Greeks. They are also a very important element in understanding road networks and links between cities. The sequence of the regions (Cyprus, Syria, islands, Caria, Ionian Islands, Asia Minor, Lydia, Aeolis, Mysia, Troad, Ozolian Locris, Boeotia, Peloponnesus, Thessaly, Macedonia, Crete, Africa, Acarnania, Phocis, Epirus, Aetolia, Corcyra, Magna Graecia, Sicily) is founded certainly on a directional movement. It appears to be a more complex operation, however, to establish whether and where we are in the presence of a true itinerary. Some regional analyses, such as the case of Acarnania in the Epidaurus list, do not seem to back up the hypothesis, even though the possibility cannot be excluded that a return trip route may be due to the fact that the thearia could have been divided into several groups to visit nearby cities contemporaneously. This could involve an itinerary, even though not in the strict sense.

Decrees relative to the concession of the thearodokia have come down to us from many other cities in which festivals were held, but up until now no list has reached us.

Nevertheless, as well as bearing in mind the difficulties present in the Peloponnesus lists, with the exception of the Hermione list, which constitutes a special case even in light of the brevity of the inscription, we can see some inconsistencies. Regarding Propontis, the southern part is linked with

105 On which most recently, Manganaro 2003, 134–138.
106 Supra, nn.48–49.
107 Supra nn.50–51.
109 For all of these see as an example the case of Lousoi, where a festival took place in honour of Artemis Hemera, regarding which, Perlman 2000, 158–160.
the Ionian, the northern part with the regions of Thessaly, Macedonia, Thrace and Hellespont.\textsuperscript{110} As well as the cities of Sciathos and Oreos, erroneously inserted among the Thessalian cities,\textsuperscript{111} the cases of Erythrae and Clazomenae, placed between Cyme and Myrina,\textsuperscript{112} should be added. In the second column Plataea, in Boeotia, is inserted after the Messenian Doureon. There follow Phrixia, in Elis, and Samikon, on the coast of Triphilia, to return to Messenia with Cyparissiae.\textsuperscript{113} After some lines at Lasion, Opous, in Elis, and Tritaeia, in Achaea, there follows the Boeotian Tanagra.\textsuperscript{114} Between Pronni, city of the island of Cephallenia, and Zacynthos, Aegina is placed. Then come Ali, unknown, Cleonai, in Argolis, to continue with the Boeotian Orchomenos and Chaeorone\textsuperscript{115} and to return in Arcadia, with Paroria, at the beginning of the third column. Among the Thessalian cities a region, Athamania,\textsuperscript{116} is inserted, where the inscriber has “forgotten” the city of Argithea, present in the addenda of the same column and in the fifth column.\textsuperscript{117} Among the Macedonian cities the sequence Ichnae, Thessalonica, Skapte Hyle, Bisanthe, Perinthus and Byzantium makes it difficult to consider this an itinerary.\textsuperscript{118}

The lists in any case retain great importance above all because of those cities that are not known from other documents, such as Oroanna, Sykea, Pelkini, Orthos, Ortha, Oikylieon, Psilaina, Lilaia, Kynia, Laphros, Apomphos, Thareida (?). Thanks to this documentation it is possible to identify at least the regions they belonged to.

Providing an explanation for the absence of cities of considerable importance proves to be complex, especially if compared with the presence of small, almost unknown cities. The absences could indicate that the city was not visited by the thearoi or that it may not have had a thearodokos, also because, as far as Delphi is concerned, this does not indicate an interruption in relations with the sanctuary on the part of those cities not present in the list.\textsuperscript{119} Therefore it appears quite difficult to explain the omission of many cities from the lists, because these use a geographical criterion, but they do not

\begin{itemize}
\item \textsuperscript{110} Most recently, Jacquemin 2012, 230.
\item \textsuperscript{111} \textit{Contra}, Robert 1946, 507, because these centres were visited by the thearoi who had gone to Thessaly, but in this case the regional scheme fails.
\item \textsuperscript{112} Col. I D(a) ll. 2–5; Plassart 1921, 47 wrote of disorder.
\item \textsuperscript{113} Col. II ll. 85–90; Plassart 1921, 50.
\item \textsuperscript{114} Col. II ll. 126–130.
\item \textsuperscript{115} Col. II ll. 142–150.
\item \textsuperscript{116} Col. III l. 34.
\item \textsuperscript{117} Col. III l. 132; col. V D l. 5.
\item \textsuperscript{118} Respectively col. III ll. 63–66 for Ichnae and Thessalonica; l. 94–99 for the others.
\item \textsuperscript{119} Respectively Oulhen and Rougemont in Rougemont 1992, 190.
\end{itemize}
appear to be a specifically geographical document. Therefore they cannot be comprehensive,\textsuperscript{120} because their purpose was not to provide a picture of the cities of a region and the inclusion or exclusion of the cities depended on other criteria. It seems therefore that the hypothesis according to which the absences are to be attributed to purely political motivations\textsuperscript{121} is to be rejected.\textsuperscript{122} This is because in the compilation of the lists various factors seem to come into play that can be traced to motives related to propaganda and "publicity".\textsuperscript{123}

From this perspective the primary objective of the lists does not seem to be geographical, even though the traces of some form of itinerary are undeniable.

We cannot exclude, indeed it appears likely, that in their movements the thearoi made use of maps or of “road maps” that were borne in mind in the creation of the lists. It therefore appears possible to suppose that there existed a document that presented a practical sequence of road links that was not always able to take the regional setup into account. If, as appears likely, the thearoi travelled in groups that were not always united as they proceeded, it is highly likely that the “recording” with the name of the city and the thearodokoi was made bearing in mind the sequence and at the same time grouping the cities according to a regional criterion. These lists, therefore, may have been drawn up when the groups met up after each of them had carried out its own epangelia. As for example the case of Doureon indicates, a city of Acarnania present in the Nemea list, but absent in the Epidaurus list, each group of thearoi followed its own route.

Therefore it does not appear to be a secondary matter to wonder for what and for whom these documents were useful. The protagonists were the thearoi and the thearodokoi with their relative cities and in their turn they were interested in the drawing up of these lists out of concern for their own and the sites’ prestige. Effectively the lists provided a service that aimed to provide the sites with a resonance linked to the competitions and to highlight the role played by individuals or by groups, who in this way drew some advantage from them.

Therefore, the function of these documents can explain the defective “itineraries”, sometimes disconnected, with presences and absences that display no logic, a secondary factor compared to the priorities of the protagonists.

\textsuperscript{120} Charneux 1966, 168.
\textsuperscript{121} Robert 1946, 510; regarding the Sicilian list, Manganaro 1964, 425; Manni 1966, 175 ff.
\textsuperscript{122} Jacquemin 2012, 230.
\textsuperscript{123} Certainly the lists respond to the requirements of visibility (Strasser 2007, 343), which must have had, however, as demonstrated by the presence of historically important names, also a political value within the cities.
and the centrality of the motives that characterized their actions. Indeed, the fact that these documents have above all a religious nature and served to publicly honour the city and the personages who had hosted the sacred messengers\textsuperscript{124} should not be neglected, probably bearing in mind some economic–sacred aspects absent in the lists\textsuperscript{125} perhaps because they were felt to be superfluous.

So, the lists seem rather to be registers or geographical gazetteers. Nevertheless, they prove to be indispensable documents both for regional geography and because they indicate the existence of secondary roads or of variations in the links between different cities that otherwise would probably not be known from other sources.

\textsuperscript{124} Rutherford 2013, 73.
\textsuperscript{125} An inscription from Argos (IG IV.6.617) carries a list of Thessalian and Macedonian cities (Heraclea Trachinia, Hypata, Echinos, Oreo, Pagasai, Pherai, Pharsalos, Larissa, Kierion, Gomphoi, Pelinna, Phalanna, Homolion, Gonnoi, then three cities that are impossible to decipher, and, finally, Edessa, Atalante, some cities near the River Europos, Cassandreia, Philippi), where the Euboean Oreo is found, as in the large Delphi inscription, and personages who have offered a sum to Argos in Eginetic or Alessandrian coin. The inscription, datable to 316–293 (Perlman 2000, 128), has been linked to the lists of the thearodokoi from whom it seems to borrow its plan. Nevertheless, it appears extremely problematic to establish whether we are dealing with aparche (according to Rutherford 2013, 25 there are two forms of aparchai: one made with the name of the city and one made with the name of an individual), destined to the sacrifice to the divinity, of an ekecheiron (Perlman 2000, 127–130) or, rather, of contributions of a religious nature (Charneux 1987, 413 Nr. 609). The presence of individuals would indicate that these are not forms of imposition, but of free offerings aimed at honouring the divinities. This last interpretation seems to find its confirmation in the difference of behaviour on occasion of the arrival of the thearoi of Cos among the Kamarinians, who limited themselves to hospitality, and the Geloans, who sent ten minae of silver for the festival in honour of the god Asklepios (Manganaro 1964, 417–418). Probably this was an offering destined for sacrifices, as an inscription of Chios would seem to indicate, in which the theoroi receive 400? drachmae to participate in the sacrifices, in particular to purchase an ὡς κάλλιστον (Robert 1936, 17; Nachtergaeel 1977, 358).

Perhaps we cannot exclude the possibility that the publication of the lists regarded not only the xenia, but implied also the offering for the cult and the festival, even though this was not specified. This could also explain the absence of some cities from the list.
CHAPTER 21

Eusebius and the Representation of the Holy Land

Jan R. Stenger

1 Introduction

Readers might be surprised to find Eusebius, the bishop of Caesarea in Palestine, included in a companion devoted to ancient geography; for he is famous, not so much as a geographical scholar, but rather as an influential, and often controversial, figure of Church history in the age of the emperor Constantine and, apart from that, as the inventor of ecclesiastical historiography. Given the Christian orientation towards heaven and the hereafter, it is not immediately obvious that geography did matter to the ancient Church Fathers. This chapter, however, is going to argue that Eusebius was instrumental in the Christian move to geographical space during the fourth century. As Christianity was gradually spreading across the Roman Empire and increasingly cared about worldly issues, geography did in fact serve particular needs of its devoted adherents. My aim is to explore how Eusebius contributed to shaping the Christian stance on geographical space.

Eusebius was born around 260, probably in Caesarea Maritima, where he later would become bishop. At that time, the city had already built a reputation as a centre of Christian learning, after the theologian Origen had taken Biblical scholarship there to new heights and accumulated an excellent private library, which his follower Pamphilus could draw on and further expand when he headed the theological school of the city. While attending Pamphilus’ school Eusebius cultivated a deep admiration for Origen and his way of Biblical research, which focused upon the textual revision and historical exegesis of Scripture. Some time after 313 Eusebius assumed the episcopate of Caesarea, the dominant see in Palestine, and played a vital part in the Council of Nicaea in 325. Soon he became involved in doctrinal struggles, the so-called Arian controversy, which shattered the Church during the reign of Constantine. The decisive point in Eusebius’ career came when he made the acquaintance of this monarch, who changed the religious landscape by acknowledging Christianity

as a legitimate religion. Eusebius enjoyed Constantine’s favour and advanced to the position of his spiritual ‘mouthpiece’, as he delivered the festive speech on the emperor’s thirtieth anniversary and hailed him as the champion of Christian faith in the *Vita Constantini*, a eulogistic biography. Eusebius died on 30 May 339, before he could finish this work.

Eusebius’ view of the close relationship between the Roman state and the Church was also the bottom line of his pioneer work, the *Church History*, written in the 320s, which was to become the seminal work of a new literary genre. Closely related to this endeavour were his influential *Chronicle*, a register of universal history, and the *Martyrs of Palestine*, which preserved the memory of Christians in this region during the persecution by the Roman authorities. Not only these writings but also his other prolific output bear witness to the scholarly formation that Eusebius received in the school of Pamphilus. They all speak of his wide reading and his vast erudition, for which posterity held him in high esteem. What has direct relevance in this context is that both his life and a considerable proportion of his writing were deeply rooted in the Holy Land; this geographical setting marked what Eusebius was dealing with in a conspicuous fashion.

Palestine, the region where the major Biblical events had taken place, saw a surge of religious activity under Constantine’s rule, which did not go unnoticed by the Christian scholar. Although its ancient capital Jerusalem, then known by its Roman name Aelia, did not resonate with all Christians at that time, as Eusebius himself informs us, signs of Christian life and worship were clearly discernible in the countryside; a number of Christian communities had emerged across the region, and even before Constantine Christian interest in Palestine had set in. However, it was only with the official toleration of Christianity and the pilgrimage of Constantine’s mother Helen to the Holy Land in 327 that Christian attention to its towns and countryside intensified. Helen in her search for relics visited the places where Jesus had lived and suffered, and in the wake of her journey an increasing number of worshippers travelled to Palestine to reap spiritual edification from the physical contact with holy places. Further, the emperor himself took possession of these sites when he ordered the erection of the churches of the Holy Sepulchre and

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3 For Eusebius’ relationship with Constantine see Barnes 1981.
4 Louth 2004.
6 Euseb., *Martyrs of Palestine* 11.9–11.
Nativity at Jerusalem and Bethlehem. Soon after, the first monasteries settled in Palestine, promoted among others by the Church Father Jerome.

So Constantine not only established the framework for the spread of Christian faith but also by his policy helped to accelerate a process of reclaiming the territory of Palestine as Christian space. After the Christian demotion of the physical world and the earthly city, also noted by Eusebius, a new interest in Palestine, now officially endorsed, gained currency among Christians. The bishop of Caesarea as a vocal supporter of Constantine’s religious agenda joined these efforts to put the Holy Land back on the religious map. His geographical studies fed into this ideological conquest of physical space.

**2 Eusebius and Geography**

Eusebius’ interest in the geography of Palestine clearly emerges from his historical account of Christian martyrs in the time before Constantine put an end to persecution and oppression. For one thing, the scope itself of his *Martyrs of Palestine* testifies to its author’s rootedness in the territory of his homeland as he seeks to outline Palestine as a distinct region in the landscape of martyrdom. Not that only the subject matter of his account is defined by geography; likewise, Eusebius lays a geographical grid onto his work by connecting the martyrs to their sites of activity. Occasionally, he discusses whether one of the figures covered by his account was actually a native Palestinian. In doing so, Eusebius weaves history and geography together, hinting at the memorial function of physical space. This historical dimension of geographical space is then also evident in the *Church History*, in particular in the first two books, where allusions to topography and geography are especially frequent. Yet new weight is lent to the Holy Land in the works dedicated to the praise of the first Christian emperor. There it is the sites of Christ’s life, Bethlehem and the Mount of Olives, that figure prominently when Eusebius praises Constantine’s church building programme; interestingly, the orator of this panegyric not only mentions that the emperor paid a tribute of reverence to the sites of Christ’s appearance but adds that the adornment with buildings

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9 Clearly indicated, for instance, in Euseb., *Martyrs of Palestine* 11.9–11.
11 See, for instance, Euseb., *Martyrs of Palestine* 2.1; 2.5.
12 See also Euseb., *Hist. eccl.* 7.18, where Eusebius refers to the memorial character of Caesarea Philippi.
turned the places into memorials and symbols of redemption to all mankind.13 Later on, in his *Life of Constantine*, the Church Father went on to demonstrate that imperial policy had contributed to the transformation of Palestine into a memorial landscape.14 With the erection of churches, Eusebius’ description underlines, Jerusalem could be recognised as a site of places associated with the life and deeds of the Saviour.

What is striking about Eusebius’ dealing with geography in these writings is that he promoted a specific notion of space that would bequeath following generations a distinct conception of a sacred landscape. His references to places and sites of Palestine bear witness to the fact that geography could be exploited for religious and even political ends. He makes clear that the setting of Christ’s deeds mattered to contemporary Christian thinking as proof of the history of salvation and the superiority over pagan superstition. It is Eusebius who first disseminated the concept of a ‘holy place’, i.e. a religious topography, and through his literary efforts turned Palestine into the ‘venerable land’, with all the fatal repercussions that should ensue but which Eusebius could not have foreseen.15 The peculiar profile of Eusebius’ interest in the geography of Palestine thus is that, rather than aiming at a systematic survey of the region or dealing with geography per se, he confined himself to occasional references to sites and places, however from a decisively religious perspective. He made Christians of late antiquity aware of the idea that geography could serve as a vehicle for the promotion of faith. This in turn required a suitable approach to geography for which Eusebius turned to a variety of sources of inspiration.

This specific interest in the geography of Palestine then informed one large-scale enterprise of Eusebius’, even if with a remarkable change of approach. Inspired by a request of his companion Paulinus, bishop of Tyre, Eusebius set out to undertake a multi-component exploration of the Holy Land, which covered various aspects of geography and topography. In the preface to its only surviving part, he describes the stages through which his project took shape:16

"Ὡσπερ ἐν προοιμίῳ τῆς ὑπὸ σοῦ προτεθείσης ὑποθέσεως, ἱερὲ τοῦ θεοῦ ἄνθρωπε Παυλίνε, ἐν τῷ πρὸ τοῦτο τάς ἐπηγγελμένας ὑποθέσεις ἀποδούς, καὶ πρῶτα μὲν τῶν ἀνὰ τὴν οἰκουμένην ἐθνῶν φωνὴ μεταβαλὼν τὰς ἐν τῇ θείᾳ γραφῇ κειμένας Ἑβραίους ὀνόμασι προσρήσεις, ἔπειτα τῆς πάλαι..." 

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As an introduction to the project suggested by you, Paulinus holy man of God, rendering the plans in the prelude to it, first having translated into Greek language the names of the people throughout the world that are given in the divine Scripture with Hebrew names, then having completed a list of ancient Judaea from the entire Bible, also distinguishing the allotments of the twelve tribes within it, and in addition having etched as if in a picture the image of their ancient and renowned metropolis, I mean Jerusalem, and the temple within it, together with the addition of the references to the places, and doing so in order and following these previous preparations as if for the use of the whole project, I shall attach your proposal, setting out the designations of the cities and villages which are transmitted by the Holy Scripture in the ancestral language, and to which region they belong and how our people call them, whether in similar fashion to the ancients or rendering them differently.

Despite the somewhat awkward wording of the passage and the use of ambiguous terms, we still can estimate in approximate fashion what Eusebius achieved with his commissioned studies: first, he translated the Hebrew names in the Bible of people living outside Palestine. In all likelihood that must have been a catalogue or list, based on similar efforts of previous writers. Then, the Church Father provided a description of ancient Judaea, dealing with the division of the territory among the Twelve Tribes of Israel; however, the term that Eusebius employs here, *katagraphe*, does not make completely clear whether this component of his project consisted in a written account or rather in a graphic map.17 Scholars are inclined to assume the former, as there is no firm evidence for a drawn representation. The third part comprised of a plan or a

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17 Elsewhere, Eusebius uses this term to refer to a written description. Euseb., *Hist. eccl.* 6.8.4; 10.4.29; *DE* 3.5.95. See Di Segni 1999, 115–116, who argues that the *Onomasticon* was based on and accompanied by a graphical map; further Wilken 1992b, 754; Stenger 2013, 225. Grafton, and Williams 2006, 222 assume that this part included a drawn map.
description of ancient Jerusalem and the Temple, and again it is hard to say what this might have looked like. These three phases, which Eusebius mentions in his dedicatory preface, seem to have been only preparatory work for the fourth and central component of the whole project. This is the only output that still survives and allows us to study Eusebius’ geographical endeavour.

Its title according to the manuscripts is *The place names of the Holy Scripture*, and that is indicative of the nature of this work. Instead of a continuous description of the territory, it consists of an encyclopaedic list of place names which occur in the Bible. Given the vague expressions in the preface, scholars are divided whether or not this list originally was accompanied by a map of Palestine, but in the text itself there is no reference to a graphic representation. Further, a detailed map of a small geographical region would be without clear precedent in antiquity, so it is safe to assume that its author intended the work just as we have it. For the topographical survey of a region the form of a register might seem rather unusual, but it is certainly akin to Eusebius’ other compilation, the *Chronicle*. As to the date of the *Onomasticon*, we can infer that Eusebius worked on it during the 320s, as the preface refers to Paulinus’ bishopric and the list of place names does not point to any historical event after this decade. However, it is impossible to establish how long the Church Father was gathering the information so that even a date in the 290s has been suggested for the composition. Arguably, Eusebius will have gathered and added his information on each site piecemeal over many years.

3  **The Onomasticon**

What is the nature of the surviving work? As its common title, *Onomasticon*, suggests, it presents a list of names, that is, place names. To give an impression of its scale, Eusebius assembles close to 1,000 entries in total, 800 of which actu-
ally refer to topographical sites and towns in the Holy Land. Of the remaining ca. 200 entries, some 80 in fact cover personal names in the Bible that have been mistaken by Eusebius’ sources for place names. Although in the preface he claims to have gone through the whole Scripture, the given information is mainly taken from the Old Testament, especially from the Pentateuch and the Prophets, while the Gospels receive only cursory examination and other books are omitted. The lemmata are arranged according to the Greek alphabet and, within the alphabetic division, structured under the headings of the Biblical books in the Septuagint; if there are only few entries, Eusebius often groups two books together. One sample passage of a sequence of shorter entries can illustrate the character of the *Onomasticon*:

\[\text{Ἀπὸ τοῦ Δευτερονομίου.}
\]
\[\Thetaόφολ. τόπος τῆς θρήνου ἑρήμου ἐνθά τοῦ Ἰορδάνου, ἔνθα τὸ Δευτερονόμιον γράφει Μωυσῆς, καταντικρὺ Ἱεριχοῦς.}
\[\Thetaαάθ. σταθμὸς τῶν υἱῶν Ἰσραήλ.}
\[\Thetaαρα. σταθμὸς τῶν υἱῶν Ἰσραήλ.}
\[\text{Ἀπὸ τοῦ Ἰησοῦ.}
\]
\[\Thetaαφφοῦ. πόλις ἣν ἐπολιόρκησεν Ἰησοῦς, τὸν βασιλέα αὐτῆς ἀνελών, ἠ γέγονε φυλής Ἰουδα. κεῖται καὶ ἀνωτέρω Βηθαφφοῦ, ὅριον Παλαιστίνης καὶ Αἰγύπτου.}
\[\Thetaανάκ. πόλις ἣν ἐπολιόρκησεν Ἰησοῦς, τὸν βασιλέα αὐτῆς ἀνελών, ἠ γέγονε φυλής Μανασσῆ, Λευίταις ἀφωρισμένη, καὶ νῦν ἐστὶν ἀπὸ δʹ σημείου τῆς Λεγεῶνος.\]

**Deuteronomy**

Tophel. A place in the wilderness ‘beyond the Jordan’, where Moses writes the Deuteronomy, opposite Jericho.

Tahath. An encampment of the Israelites.

Terah. An encampment of the Israelites.

**Joshua**

Tappuah. A city that Joshua besieged and killed its king; it belonged to the tribe of Judah. It has also been mentioned above as Beth-tappuah, a boundary between Palestine and Egypt.

Tanaach. A city that Joshua besieged and killed its king; it belonged to the tribe of Manasseh and was set apart for the Levites. It is now at the fourth mile from Legio.

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22 Euseb., *Onom.* p. 98.1–12.
While Eusebius’ geographical project focused on the territory of Palestine, the *Onomasticon* also includes few place names from outside these confines, for instance lemmata on the mount Ararat, Eden, Babel and the river Euphrates; indeed, the two longest entries, on Ararat and Babel, exceed the geographical limits of the *Onomasticon*, with their length partly owing to quotations of the Jewish writer Josephus. The longest on Palestine itself is that on Beer-Sheba, which comprises about eleven lines in the modern edition. Generally Eusebius sticks to his principle of including only places names given in the Bible, with more recent settlements such as Caesarea, Legio and Neapolis only added for the sake of location of Biblical sites. The entries vary considerably in their information, some presenting all relevant detail that could be found in the Scripture, others giving the bare name of a site. Obviously, Eusebius did not have even knowledge of all the sites and places which he excerpted. Likewise, the geographical coverage betrays some unevenness; while the *Onomasticon* is most detailed on the hills and the coastal plain of Galilee, regions on the fringes of Palestine are dealt with rather patchily. Unsurprisingly, a compilation of this scale, assembled without the help of modern electronic tools, comprises nearly 100 double entries, few of which were noticed as such by the author himself. Further, the *Onomasticon*, apart from misunderstandings of the Biblical text, contains several mistakes in the given information or inconsistencies in the presentation. Considering the amount of detail, such inaccuracies hardly make a dent in Eusebius’ scholarly achievement.

Taken as a whole, Eusebius’ catalogue displays a plethora of detail on the Biblical sites. The conspicuous feature, which seems to have been the author’s core concern, is the identification of the ancient places. In the majority of entries Eusebius attempts to localise the place name that a reader of the Scripture encounters and give its current Greek name. These identifications are usually based on phonetic similarity and etymology, as it is still practised in modern Biblical Archaeology. Further, just as mentioned in the preface, Eusebius regularly gives the tribe in whose territory the site was situated; this

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24 Euseb., *Onom.* p. 50.1–12.
25 Entries comprising no more than the place name are, for instance, Beth-macaah (p. 56.17) and Shur (p. 152.6).
26 Detailed maps of Palestine with the places contained in the *Onomasticon* are provided by Freeman-Grenville et al. 2003 and Notley, and Safrai 2005.
27 See, for instance, Euseb., *Onom.* p. 72.26–27; 84.16; 108.3–4.
28 On the use of preserved toponyms and its limits in the historical geography of the Holy Land see Elitzur 2004. He bases his work on Eusebius’ *Onomasticon*. 
information he of course gathered from the Bible itself. In many cases he also includes details about boundaries between different regions or discusses the identity of the inhabitants and other noteworthy features relating to the natural environment. For instance, in the entry to Jattir he makes mention of the Christian population that lived there in his times; and in dealing with Bela near the Dead Sea he even considers the growing of date palms and balsam worth mentioning. Contrary to what one might expect, references to the religious allegiance of the current inhabitants are relatively sparse; this is even more surprising, given that Eusebius as the bishop of Caesarea must have been thoroughly familiar with the religious landscape of Palestine. In contrast to these rather random details, the information on Roman roads and distances along them is a fairly frequent feature of the *Onomasticon’s* entries; Eusebius refers more than 30 times to 20 different military roads in the provinces of Palaestina, Arabia and Syria and provides information about distances between towns according to milestones, in order to increase the accuracy of his localisation.

In addition, we find references to 11 Roman garrisons, including the number of legions.

In covering this range of detail, the Church Father did not aim at exhaustive treatment, nor would he have been able to do so as he did not undertake a systematic survey on a tour across the Holy Land. The depth of information in the lemmata is not uniform, either; sometimes, when Eusebius had no additional knowledge, he merely restated what he could find in the Bible, while in other instances he supplied first-hand knowledge of the contemporary situation. The nature of the information given in the *Onomasticon* then suggests that the work is, in modern terms, a gazetteer, i.e. a geographical directory which combines a list of place names containing details on physical features, location and population. What is peculiar to Eusebius’ effort is that, rather than basing the *Onomasticon* on the late-ancient situation of Palestine, he takes a historical period as his starting point to map this state onto the contemporary territory. Thereby, the spatial and the chronological dimension are interwoven.

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29 Euseb., *Onom.* p. 108.1–4 on Jattir; 42.1–5 on Bela and the date palms and balsam in its surroundings. Further details on physical aspects of individual places are included in the lemmata on Beth-anath (p. 52.25, healing baths); Beth-zatha (p. 58.22–25, twin pools and their water); Gadara (p. 74.12–13, baths of thermal waters) et al.

30 11 entries refer to Jewish population, 4 to Christian (p. 26.13–14; 108.1; 112.14; 172.1–3), and 1 to Samaritan and Ebionite respectively.

31 Isaac 1998, 293–6; Notley, and Safrai 2005, XXIII.

32 E.g., Euseb., *Onom.* p. 42.2–3; 96.20–21.
as Eusebius also hints at in his preface, referring to the commemorative function of his enterprise.33

The nature of the information of course depended on the sources that were available to Eusebius. Although he had the opportunity to collect information on his travels through his diocese he decided to base his gazetteer, not so much on autopsy, but primarily on written sources. As he makes plain in the introduction, his geographical project drew mainly on the Holy Scripture; the Pentateuch and the Prophets provided the textual framework and determined which place names to include in the list. Despite his claim that he browsed through the whole Bible, Eusebius in fact concentrated on the Old Testament, whereas the Gospels account for only 23 place names. Further, these entries display a different style of presentation, so we might guess that Eusebius added them as an afterthought.34 For the modern patristic scholar, the Onomasticon's indebtedness to the Scripture is invaluable as it allows us to analyse the version of the Biblical books that Eusebius used; references to different Greek translations of the Old Testament show that he made his excerpts from Origen's Hexapla.35 Apart from Scripture, Eusebius looked for geographical information in the works of the Jewish historian Josephus, whose Jewish Antiquities are quoted in a dozen places.36 It is also likely that he had some Jewish compilations before him when he was working on the Onomasticon; this is suggested by the fact that the majority of the traditions of sacred sites are of Jewish origin.37 Further, the Jewish scholar Philo in the first century AD and also Origen had compiled similar lists of Biblical names so that it is reasonable to surmise that Eusebius drew on this groundwork.38 A matter of debate is to what extent he also had access to the archives and official maps that were available in the Roman administration in Caesarea, the capital of the province Judaea/Palaestina at that time.39 To a lesser degree, the Onomasticon's

33 See the quotation above, p. 385.
information on late-ancient features of sites and towns seems to go back to Eusebius’ autopsy and the accounts of people living in the region.\(^{40}\)

In any case, as to Eusebius’ use of sources, there are several strata of material discernible in the published work. The nature and sequence of numerous entries reveal that Eusebius made excerpts while reading the Bible, collecting and rearranging the existing material, and afterwards adding the odd entry from the Gospels. One passage can illustrate that in places the *Onomasticon* amounts to a mere rearrangement of what is encountered during a linear reading of the Old Testament:\(^ {41}\)

\[
\begin{align*}
\text{Μασογάμ. χώρα Μωάβ, ώς Ἰερεμίας.} \\
\text{Μισώρ. χώρα Μωάβ, ώς Ἰερεμίας.} \\
\text{Μωφάθ. χώρα Μωάβ, ώς Ἰερεμίας. κεῖται καὶ ἀνωτέρω Μηφαάθ.} \\
\text{Μαών. χώρα Μωάβ, ώς Ἰερεμίας.} \\
\text{Μολχόμ. εἴδωλον Λμών, ώς Ἰερεμίας.}
\end{align*}
\]

Masogam. A region in Moab according to Jeremiah.
Mishor. A region in Moab according to Jeremiah.
Mepha-ath. A region in Moab according to Jeremiah. It has also been mentioned above as Mephaath.
Beth-maon. A region in Moab according to Jeremiah.
Milcom. An idol of the Ammonites according to Jeremiah.

All of which begs the question of what Eusebius’ original contribution to his geographical enterprise is, and whether to apply the concept of authorship to his compiling the list of place names. Some scholars dispute that Eusebius can be regarded as the *Onomasticon*’s author in the strict sense and see him rather as a slavish excerptor and collector without any ambition of achieving something original.\(^ {42}\) Even if we dismiss this verdict as too harsh, the debate has nevertheless brought out that the *Onomasticon* is primarily a fruit of learning and scholarship.

\(^{40}\) An entry such as that on Batanaia (*Onom.* p. 52.24–26) by the phrase ‘there are said to be medicinal baths’ makes it plain that Eusebius did not aim at a first-hand survey of the contemporary state but relied on other testimony.


\(^{42}\) The view that the *Onomasticon* is merely a reworking of a Jewish source has been put forward by Melamed in several articles published in Hebrew (summarised by Wolf 1964, 85–89); see further Notley, and Safraï 2005, XV–XVIII. A more favorable picture of Eusebius’ achievement is given by Barnes 1981, 166–167.
Eusebius’ use of source material also points to the intellectual profile of his geographical project. What inspired him to undertake this time-consuming task was not a genuine interest in, let alone deep love for, his home country. Instead, the scope and range of the Onomasticon were determined by the given fact that a body of texts acknowledged as canonical by the community of Christians had already paid a remarkable attention to geographical matters; the history of the Jewish people, and its account in the Bible, was inextricably connected to geographical space. Furnishing information on the geographical setting of Biblical history was then primarily meant as an instrument to help the reader understand the Scripture and elucidate the historical level of Biblical narrative. In a certain sense, we can see the Onomasticon mainly as driven by an antiquarian impetus, as Eusebius concentrated on gathering the realia from the account of the Scripture. It was this scholarly approach that shaped the form of presentation. By adopting the established style of an encyclopaedia—in particular presenting relatively short entries in alphabetical order—Eusebius made it plain that he intended the Onomasticon as a storage of detailed information on a clearly defined subject matter, based on meticulous research. From the outset he points his readers in this direction when he boasts the Onomasticon’s comprehensiveness, a scope typical of encyclopaedias. Further, the technique of accumulating existing knowledge and making it accessible is a feature which was familiar to ancient users of encyclopaedic works. Finally, the nature of the single entries, their schematic character, repetitive style and recurring categories, indicates that the author followed closely the encyclopaedic pattern. Since Eusebius’ geographical encyclopaedia was based on a text, geography merged with lexicography, to the effect that the Onomasticon was a kind of commentary to the Bible, even though one arranged alphabetically, not in parallel to the text. Consequently, the presentation of the material itself reveals that Eusebius from his study room cast on the Holy Land the look of a scholar, rather than that of a curious traveller. This scholarly perspective also suggests where to look for Eusebius’ models in compiling his gazetteer. Certainly, exploring the territory of a region was the task of ancient geographers, but it is evident that the Onomasticon followed in neither the footsteps of Ptolemy’s mathematical geography nor writers of

In similar fashion, yet with a focus on previous literary works, the Praeparatio Evangelica showcases Eusebius’ encyclopaedic ambitions.

See the quotation from the preface above.

On the encyclopaedic tradition and knowledge literature in imperial times see König, and Whitmarsh 2007.
descriptive geography such as Strabo.\textsuperscript{46} What could provide him with a model was, instead, Homeric philology. It was in Hellenistic Alexandria where for the first time philologists undertook painstaking research in canonical texts and produced commentaries and glossaries to elucidate their meaning to the contemporary audience. They not only sought to produce an authoritative text of the Homeric epics as a fruit of thoroughgoing textual criticism but some of them also developed an interest in Homeric geography. The grammarian Demetrius of Scepsis in the second century BC wrote a vast historical and geographical commentary on the catalogue of the Trojan forces in the second book of the \textit{Iliad}. His contemporary Apollodorus of Athens put much effort in an extensive commentary on the Iliadic catalogue of ships, in which he drew an image of Homeric Greece and explained the place names contained in the epic catalogue.\textsuperscript{47} Later on, ancient writers working in the field of geography published lexica, for instance Diogenianus in the second century AD; his encyclopaedia, as its title boasted, aimed to record the cities throughout the world.\textsuperscript{48} Although it is not known whether Eusebius was actually familiar with such works, it is beyond doubt that he had immersed himself in the tradition of ancient philology and lexicography and knew how to apply their methods to his Biblical scholarship.\textsuperscript{49}

Moreover, Origen had set a clear precedent when he compiled a Biblical onomasticon, which Jerome later translated into Latin.\textsuperscript{50} Origen there revised and expanded an earlier Jewish lexicon of names, ascribed to Philo of Alexandria, to explain the meaning of Hebrew names in the Old Testament to his Greek-speaking audience. With this aid for the Biblical commentator he had paved the way for applying the techniques of Greek philology to a new subject, and Eusebius followed suit. Eusebius’ \textit{Onomasticon} was, then, firmly rooted in the tradition of historical exegesis of the Scripture as practiced by his admired predecessor Origen; from this type of Biblical scholarship that was indebted to Alexandrian philology he drew the inspiration for his encyclopaedic enterprise.

\textsuperscript{46} On the two types of geography in antiquity see Dueck 2012, 20–98.

\textsuperscript{47} Dueck 2012, 21–22 on Hellenistic research into Homeric geography.

\textsuperscript{48} His work is mentioned in his entry in the Lexicon Suda (§ 1140). This parallel is drawn by Barnes 1981, 109.

\textsuperscript{49} It is at least obvious that Eusebius made considerable use of the works of the scholar Alexander Polyhistor (first century BC), who was renowned for his geographical writings on nearly all countries of the ancient world. Cf. Carriker 2003, 139–141; Adler 2011.

\textsuperscript{50} Jer., \textit{Liber interpretationis Hebraicorum nominum}. Wolf 1964, 73; Barnes 1981, 110; Wilken 1992b, 754.
Considering the tradition of learning in which Eusebius placed his *Onomasticon*, we can assess more accurately what aims he pursued with his project and what kind of audience he targeted. As they directed their attention to the *Onomasticon* and exploited the list to localise Biblical sites in the Holy Land, modern scholars were quick to argue that Eusebius had had in mind to equip late-antique travellers with a useful guidebook, a Baedeker in all but name, for their journey through the Holy Land; too compelling seemed the coincidence of the *Onomasticon*’s composition and the rise of early Christian pilgrimage. Just as Biblical Archaeology since the nineteenth century had successfully relied on Eusebius’ expertise, ancient pilgrims, according to this view, would use the *Onomasticon* to find the places of the Biblical narratives in the Palestinian landscape. However, with research investigating the nature of the work more thoroughly, this view has been challenged. For an ancient traveller a guidebook made up of an alphabetical list would have been of limited usefulness. What would a pilgrim roaming the countryside have done with entries that often give the bare name of a place? When we consider Origen’s example it seems far more likely that Eusebius as well intended his catalogue as an aid to exegesis. After all, in his preface he indicates that the whole project owes its existence to reading the Scripture. While going through the text of the Bible the Christian reader, if furnished with the gazetteer next to the Scripture, could quickly look up what was known about a place, its history and localisation. So in the line of Origen’s and Eusebius’ Biblical scholarship, the *Onomasticon* served as an instrument for elucidating the historical meaning of the Scripture.

And yet it can be argued that the Church Father considered other purposes as well. Modern readers have been struck by the fact that the *Onomasticon* is largely devoted to the books of the Old Testament and has little to say on the Gospels. This observation has to be put in the context of Eusebius’ other writings. One of the major aims of ancient Christian thinkers was to argue that Christianity had taken over from the Jews the role of God’s chosen people and

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51 Wolf 1964, 89; Grafton, and Williams 2006, 222.
52 Instead, late-ancient accounts of pilgrimage present their material in the fashion of a perihegesis. Cf. the *Itinerarium Burdigalense* and Egeria’s *Peregrinatio ad Loca Santa*.
55 See also Jerome’s remarks in his preface to the Book of Chronicles (*PL* 29.423): ‘Whoever has seen Judaea with his own eyes and knows the memories of the ancient cities and the names of the sites, whether the same or changed, will gaze more clearly upon the Holy Scripture.’
give reasons for this shift in divine favour. In their discussions it was essential to prove that already the Old Testament had foreshadowed the coming of Christ and claim these books for Christian religion. Eusebius was no exception in this line of reasoning. Many of his works speak of his apologetic efforts to lend historical depth to Christianity and refute Jewish claims; these discussions naturally focused on the Old Testament writings. In the light of this setting, it is reasonable to assume that the Onomasticon had also an apologetic aim. In drawing a virtual map of the Holy Land it implied that the history and territory of ancient Palestine were part of the Christian heritage. What is more, through mapping the Old Testament times onto physical space Eusebius suggested that the Christian claim to antiquity was firmly founded on material evidence and could still be experienced in the environment. After engaging the dimension of time for apologetic purposes in his Chronicle he now moved on to geographical space. For this goal of persuasion it was more promising to impress readers with an allegedly comprehensive and well-researched inventory of geographical information than equip them with a practical vade mecum.

Related to this issue was the quest for Christian identity. The appropriation of the Holy Land operated not exclusively in struggles against other religious groups; likewise, it was an effective strategy of Christian identity work. As I mentioned in the beginning, in late antiquity the material world in all its facets gained in relevance among Christians. Martyrs’ tombs and relics attracted crowds of believers who wanted to come into contact with the saints; the first pilgrims travelled Palestine; Church Fathers and clerics addressed the daily issues of urban life; asceticism directed attention to the human body. In this development Eusebius had his share when he made his readers aware of the physical sites of Biblical history. A good number of lemmata in his gazetteer emphasise that a site was still shown and could be seen. In other words, Eusebius stressed that historical memories were tangible and could be experienced in the contemporary material world. With this move he introduced the idea of a memorial space into Christian thinking; from then on, Palestine...
was to be read as a treasure house of Christian past and identity. Thus, the Onomasticon’s contribution to creating a sense of Christian memory was related to and, simultaneously, fuelled the Christian desire for contact with the sites, which finds expression in Constantine’s building programme and early pilgrimage. Several entries of the Onomasticon show that Eusebius was completely conscious of this wish to touch and feel Christian faith in material reality. The lemma on Bethabara is a fine case in point (58.18–20):

Βηθααβαρά. ‘ὅπου ἦν Ἰωάννης βαπτίζων’, ‘πέραν τοῦ Ἰορδάνου’. καὶ δείκνυται ο τόπος, ἐν ὧν καὶ πλείους τῶν ἀδελφῶν εἰς ἔτι νῦν τὸ λουτρὸν φιλοτιμοῦνται λαμβάνειν.

Bethabara. ‘Where John was baptising’, ‘beyond the Jordan’. The place is shown where even now many of the brothers are eager to receive a bath.

The gazetteer’s usefulness lies then not so much in each individual entry but rather in the whole picture it evokes. Only when readers have the geographical inventory of the Bible in accessible presentation before them will they form an image of the territory of Palestine in their mind and recognise it as a coherent and well-defined space that is inscribed with Christian memories. In a sense, Eusebius makes the geography of the Holy Land readable.

If we see the Onomasticon in this perspective, it becomes apparent how Eusebius conceives of geographical space. His main concern is clearly not an exhaustive coverage of a region with a wide range of information about its physical nature. Rather, space for Eusebius consists primarily of places that have a particular significance for the intended audience. The places in this conception assume the role of signs or tokens, as they point to and stand for something else, namely for Biblical history. Elsewhere, when talking about Constantine’s appropriation of places connected to Jesus’ life, Eusebius makes explicit that he sees the sites as gnorismata, tokens, that is, encapsulating a specific meaning. In the context of the discovery of the Holy Sepulchre, Eusebius claims that this place serves as a ‘clear and visible proof of the wonders of which that spot had once been the scene, a testimony to the resurrection of the Saviour clearer than any voice could give’.

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61 Already in 1941, Maurice Halbwachs in his The Legendary Topography of the Gospels in the Holy Land explored how since antiquity Christian collective memory has been attached to the physical space of Palestine (Halbwachs 1992). See Stenger 2013.
63 Euseb., Vit. Const. 3.28.
is then a space interspersed with visible proofs of the historicity of the Biblical account. Therefore, it is essential that this evidence is material and can still be perceived by Christians of Eusebius’ times. Consequently, even though the Onomasticon is primarily intended as an aid for exegesis it promotes a notion of geographical space that is anchored in Christian experience during late antiquity. It advances a vision of sacred space to provide Christianity with a memorial landscape. With this approach to geography Eusebius stimulated the Christian move to the rehabilitation of material space. Not that he was the first Christian to become aware of the physical world, but the vision of the Holy Land presented by the Onomasticon made a decisive step towards a genuinely Christian geography. Its exploration of Palestine was not so much an end in its own; rather, it functioned as a vehicle for a religious agenda. By compiling his encyclopaedic list Eusebius re-mapped the Mediterranean and fixed the territory of Palestine in the centre of the Christian mental map.

4 Afterlife

Eusebius’ vision of a religious geography seems to have appealed to other Christians in late antiquity. For instance, the Onomasticon’s implied message was not lost on the Church Father Jerome when around 390 he translated the register into Latin. As meaningful changes had begun to transform the Palestinian landscape, Jerome felt the need to adapt the Onomasticon to his own times. Apart from the translation proper, he updated the list by adding references to church buildings that had been erected in the Holy Land in the meantime. In so doing, Jerome underlined that the Biblical land was being reclaimed by Christianity. Furthermore, other Latin translations disseminated Eusebius’ image of Palestine, and a Syriac translation still survives. This suggests that his geographical project must have resonated with contemporary needs. It is further not unlikely that, despite its scholarly nature, the Onomasticon was used by later itineraries of Christian pilgrims. However, it is hard to determine whether parallels between these travel books and the Onomasticon are due to direct influence or merely the identity of subject matter. Equally open to debate is the question whether or not the famous map of

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64 This point is made by Eusebius himself when he, right at the outset of the oration on the church in Tyre, highlights that architectural space can be seen as material proof that what has been committed to memory by Scripture is faithful and true (Hist. eccl. 10.4.5–6).
Madaba in Jordan shows the marks of Eusebius’ influence.67 This large-scale mosaic, created in a church during the sixth century, covers roughly the same area as the Onomasticon. It shows the territory of Palestine, displaying numerous vignettes of towns and cities and even images of animals. Despite obvious similarities, the link between Eusebius’ register and the map has been disputed, as the mosaic deviates from the material provided by the Onomasticon.68 Be that as it may, it is clear that Eusebius’ geographical project hit the right note among Christians of his time.

Its appeal, however, did not end with antiquity. When interest in the sites of the Holy Land rose in the middle of the nineteenth century and the discipline of Biblical Archaeology emerged, it was immediately realised that the Onomasticon provided a cornucopia of geographical detail that was still of use in localising the Biblical places. This topographical and onomastic approach dominated the reading of Eusebius’ inventory until the end of the last century when cultural approaches revealed further layers of meaning, in particular the Onomasticon’s function in the emergence of the idea of a memorial landscape.69 In a sense, modern pilgrim guides and popular books on the Biblical sites still owe much to Eusebius’ geographical effort and often make mention of their ancient ‘predecessor’.

The reason for this is that Eusebius offers an unrivalled geographical coverage of a region in the Roman Empire. No other territory in antiquity received such a detailed treatment. And despite its rather limited scope and its shortcomings, the Onomasticon proved fit for different uses, ranging from Biblical scholarship to religious topography. Although a far cry from popular Biblical Atlases in our days, Eusebius’ Onomasticon bequeathed Christianity up to modern times an idea of the geography of the Holy Land that inspired archaeological scholars, travellers and common imagination. This enterprise, then, secures the Church Father a place in the history of geography.

67 For the Madaba map see Piccirillo, and Alliata 1999.
68 Avi-Yonah 1954, 31–2 holds the view that the artist of the mosaic relied on the Onomasticon; see further Isaac 1998, 289–90. Di Segni 1999 challenges this assumption and highlights the differences.
69 Groh 1985; Stenger 2013.
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