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'What Duane W. Roller has achieved in this book is impressive and invaluable. The Greek and Roman grasp of geography, from both spatial and scientific perspectives, developed remarkably over more than half a millennium. So while the approach taken here of explaining this growth chronologically might seem a straightforward task, in fact it is no such thing. Most of the relevant geographical writings and maps are lost. Even some fundamentally important Greek ideas have to be reconstructed from references by later authors who did not always agree with them, let alone perhaps fully understand them. Roller's earlier studies of such giants in this story as Pytheas, Eratosthenes and Strabo make him uniquely qualified to craft an informed, balanced, up-to-date synthesis in defiance of the never-ending obstacles. He writes in a concise, accessible style. Anyone whose imagination is fired by the absorbing puzzle of how the Greeks and Romans envisioned and recorded their surroundings both near and far should read this important book.'

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ANCIENT GEOGRAPHY

The Discovery of the World in Classical
Greece and Rome

DUANE W. ROLLER

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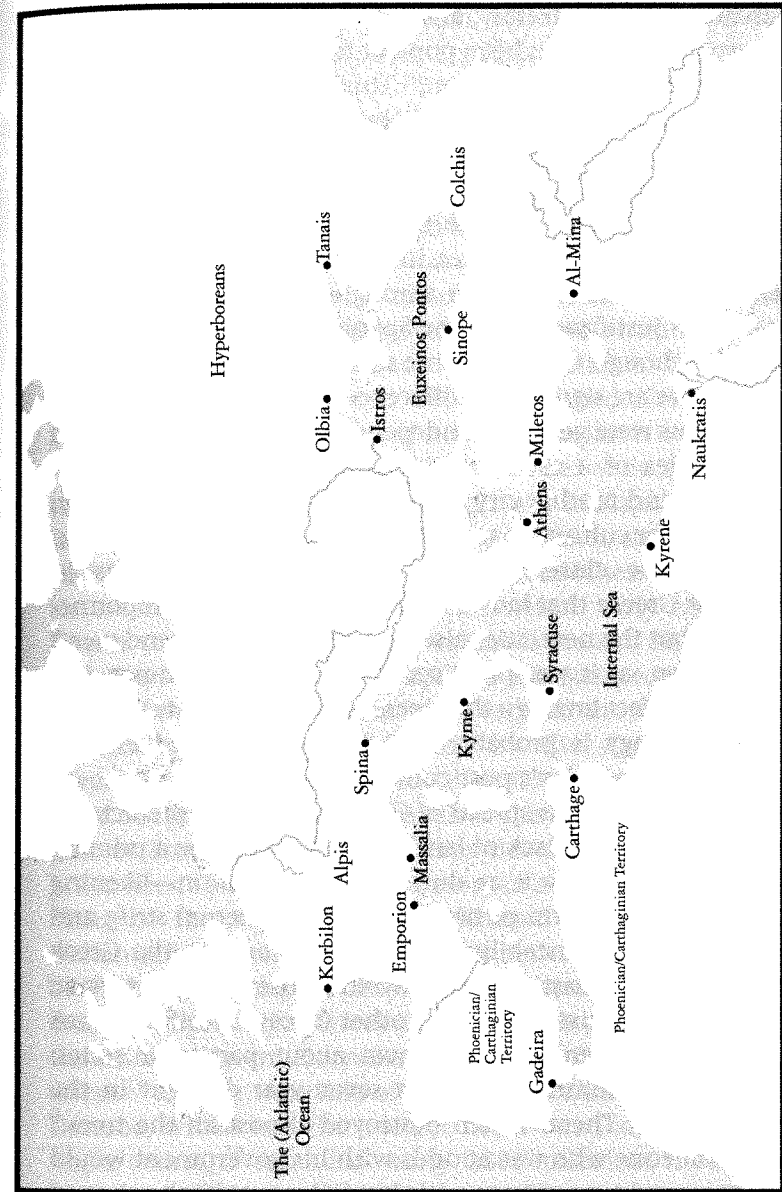
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CHAPTER 2

THE EXPANSION OF THE GREEK GEOGRAPHICAL HORIZON

Founding New Cities (Map 4)

Greeks were on the move and founding new cities throughout much of their history. But from the early eighth century to the latter sixth century BC there was a particularly intensive period of shifting population, as over a hundred settlements were established, from Tanais at the far northeast corner of the Black Sea to Emporion in northern Iberia, and Kyrene west of Egypt. In fact, much of the available coast of the Mediterranean came to be populated by Greeks during these years: they only tended to avoid areas already thickly inhabited (such as the Levant and central Italy), or regions that were claimed by others, especially the Phoenicians or Carthaginians in the western Mediterranean. Many of these new towns were at or near the mouths of the great European rivers: Massalia near the Rhodanos (Rhone), Spina near the Padus (Po), Istros and Tomis near the Istros (Danube), Olbia at the Borysthenes (Dnieper), and Tanais at the river of the same name (Don). All these rivers, and many others, provided access to a hinterland and trade routes that led from the Mediterranean or Black Sea far into the interior of Europe and to the North Atlantic and Baltic. The geographical impact of these settlements and their trading connections can be seen in the expansion of topographic knowledge. Homer's world was limited to the



Map 4. The spread of Greek settlement in the Archaic period.

eastern Mediterranean and no farther west than Sicily. Hesiod, a generation or two later, knew about the Black Sea, the Etruscans in northern Italy, and Liguria.¹

For many years it has been popular to call this dissemination of Greek peoples "colonization." This is an unfortunate term that grew out of false parallels with European activities of the sixteenth through nineteenth centuries. As early as the mid-sixteenth century, Spanish chroniclers were seeing parallels between Roman Spain and their own settlement in the Americas. Soon the analogies included the Greeks, and the Greek and Roman expansion throughout the Mediterranean was used as justification for the Spanish conquest of the New World.² Although there are some similarities, especially in the causes, there are significant differences, most notably that the Greek towns were generally independent states, not economic dependencies of a mother city.³ The relationship between settlement and mother city was a matter of a shared ancestry, religion, other cultural institutions, and their dialect of Greek. Ties could be close, as demonstrated by the events in northwest Greece that led to the beginning of the Peloponnesian War, but the new cities also asserted their independence.⁴ Colonization, as it was practiced in early modern times, is a highly imperfect analogy that seems anachronistic today, but the terminology is probably too deeply embedded ever to change, even in today's post-colonial world.

The reasons for this spread of Greek peoples are predictably varied. In antiquity, lack of land was believed to be a primary cause, and Plato saw it as due to overpopulation—likening emigration to a swarm of bees—as well as internal strife and external attacks.⁵ Instability was endemic among the Greek states, and in the eastern Greek world of the sixth century BC Persian expansionism created another threat. Specific reasons for overseas settlement are known about particular states: Kyrene was established due to a seven-year drought in the mother city of Thera, which destroyed almost all the trees.⁶ Often, someone who was at odds with his government would be encouraged to emigrate with his followers: Phalanthos of Sparta, after leading a failed coup, was sent to found Taras in

Italy.⁷ The establishment of new cities could be tortuous and difficult, and there are many reports of failed settlements, sequential attempts to locate in several places, and even multiple returns to the mother city. The best surviving account of the process is the story of the establishment of Kyrene, around 630 BC, which took years to implement and was vividly described in great detail by Herodotos.⁸ To be sure, one parallel with later European colonization remains valid: there was always a desire for wealth through trade (or less benign means), but in antiquity this was probably more a result of the new settlements, not a reason for them. Nevertheless, potential sources of wealth were identified at an early date, and when Kolaïos of Samos sent 60 talents home from southwestern Iberia, about 630 BC, he had already heard something about the riches of little-known lands in the west.⁹

About 20 central and east Greek states were involved in these movements. The most prolific was Miletos, responsible for nearly a quarter of the settlements, which, starting around 700 BC, ringed the Black Sea and its approaches. This brought an extensive area into the Greek horizon, early enough for Hesiod to include two of its rivers (the Istros and Phasis) in the *Theogony*.¹⁰ Kyzikos in the Propontis and Sinope on the south shore of the sea were probably the earliest; the Milesians were replicating the route followed by the Argonauts long previously.¹¹ The great rivers that flow into the northern Black Sea provided access to much of the interior of the eastern part of Europe, and relationships developed with the local potentates: Herodotos told the story of a certain Skyles, styled "king of the Skythians," who learned Greek and became Hellenized, alternating his residence between the Milesian city of Olbia and among his people in the hinterland, changing his dress appropriately.¹² Greek material goods penetrated far into the interior, up the Borysthenes (modern Dnieper) and other rivers.¹³ On the west side of the Black Sea the Istros (modern Danube, which was the ancient name—as Danuvius—for its upper course),¹⁴ extended nearly 1,800 miles into the interior, and the Milesian city of Istros was founded at its mouth, perhaps in the seventh century BC. Before long, dependent

settlements were established a short distance up the river.¹⁵ A rough topographical sense of the interior began to develop: it came to be believed that one of the Istros' upper tributaries was the Alpis, and that the sources of the great river were in the far west of Europe where the Kelts lived, somewhere around the city of Pyrene.¹⁶ These earliest citations of the Alps and the Pyrenees, certainly known well before Herodotos recorded them, are rare documentation of the evolution of specific topographical knowledge, in this case frozen rather erroneously as early data.

Greek settlement in southern Italy and Sicily was more varied, but less valuable in the development of geographical knowledge, as Greeks had been in these regions since the Bronze Age. Several states from central Greece and the Peloponnesos established approximately 30 cities in this area. The earliest was by the Euboians on the island of Pithekoussai (modern Ischia) in the Bay of Naples, at the beginning of the eighth century BC, and before long—perhaps within a generation—Greeks had moved onto the nearby mainland at Kyme.¹⁷ Greeks knew about the land to the north, but the Etruscan presence kept them out; nevertheless Greek trade goods soon penetrated their territory, representing the beginning of Greek contact with the central Italian world that later produced the Roman Republic.

There were no Greek settlements north of the Bay of Naples until the Ligurian coast (the modern French Riviera). On the eastern side of Italy there was a cluster of isolated towns or trading posts at the head of the Adriatic near the mouth of the Padus (modern Po), especially Spina (near modern Comacchio) and Adria (modern Atria). Greeks—the Athenians were perhaps the first—were here from the latter sixth century BC.¹⁸ Spina and Adria may have been Etruscan outposts with a Greek mercantile quarter. Spina, however, was prosperous enough to endow a treasury at Delphi and for a while was the wealthiest city on the Adriatic.¹⁹ These towns provided access to the Alps through the upper Padus valley, as well as to the amber route: Baltic amber had been known in the Greek world since prehistoric times.²⁰ The trade went through the passes of the

eastern Alps and reached the Istros system, perhaps tapping the precious metal resources in modern Carinthia. But there never was a long-standing Greek presence at the head of the Adriatic, and any Greeks there were eventually assimilated by the expanding Etruscan and then Roman presence.

West of northern Italy was the Ligurian coast. On it was the most significant Greek city in the west, Massalia (modern Marseille), founded about 600 BC by Phokaia (modern Foça), an Ionian city that played a disproportionate role in opening the western Mediterranean to the Greeks.²¹ Massalia lies at the head of a spacious harbor whose entrance is hidden, with freshwater springs emptying into it: a more propitious townsite can hardly be imagined, and its unusual topography is still apparent today. Moreover, this was the last good harbor before the mouth of the Rhodanos (modern Rhone), the largest river on this coast, no more than 30 miles to the west. The Rhodanos flowed directly from the north, and, ascending it, Massalian traders gained access to the river systems of northwest Europe. West of the site of modern Lyon the Liger (modern Loire) comes within fewer than 30 miles of the Rhodanos and, continuing up the Rhodanos and its tributary the Doubis (modern Doubs), it is eventually a crossing of only about 40 miles to the upper Rhenos (modern Rhine) at the site of Basel. Thus the Massalians had astonishingly easy access to much of northwest Europe, the North Sea, and the islands beyond. At the mouth of the Liger a trading post named Korbilon was established, perhaps at the site of modern Nantes.²² Massalia founded other settlements, especially in the sixth century BC, when more immigrants arrived from Phokaia due to Persian pressures,²³ creating a sphere of influence that controlled the entire Ligurian coast, from Emporion (modern Empúrias in Spain) in the west to Monoikos (modern Monaco) in the east. Massalian trade and commerce still has its impact today: the first settlers brought vine cuttings with them that began the French wine industry.

There were no major Greek cities in Iberia beyond Emporion in the northeast, although there were a few trading posts.²⁴ Phokaians and Massalians did not venture to establish major

settlements in Phoenician territory. But their explorers rounded the Iberian peninsula and may have gone as far as the British Isles, although there was little movement north of Ophioussa, perhaps Cape Roca near Lisbon, the westernmost point of Europe. Greek activity in and beyond the Phoenician zone was probably limited to a number of reconnaissances, and Korbilon, at the mouth of the Liger, was almost certainly settled from the interior. These explorations are described in a Latin poem of the fourth century AD called *Ora maritima*, by Rufus (or Rufius) Festus Avienus, describing the coast from Brittany to Massalia (in that direction), with some allusion to what was beyond Brittany. The poem is peculiar and difficult to analyze, as material over a wide chronological range is included—into the Roman period—but it seems in part based on a Phokaian *periplous* of the sixth or fifth century BC whose author is unknown. Confusing as the *Ora maritima* may be, it is the primary source for early Greek exploration of the coasts of the Iberian peninsula and beyond.²⁵

North Africa was largely devoid of Greek settlement, except for those in the Kyrenaika west of Egypt, where Kyrene was founded by the Aegean island of Thera around 630 BC.²⁶ As it and its dependencies were the only Greek cities in a vast area, Kyrene served as an important contact point between the Greek world and interior Africa. By the mid-fifth century BC the oasis routes across the Sahara were known, with one reaching as far as a city and an eastward-flowing river containing crocodiles.²⁷ There is no evidence for the name of the city—Timbuktu and others have been suggested—but the river is probably the Niger.²⁸ Yet Herodotos' informants thought that it was the Nile, perhaps for no other reason than the Nile was the only major river known in Africa. The southernmost stages of the journey were guided by people who spoke no known language and were "small men, less in height than normal." This was not the only time that Herodotos referred to men of small stature in sub-Saharan Africa, since a Persian, Sataspes, around 479–465 BC, encountered them in a failed circumnavigation.²⁹ These were probably the earliest specific references to the pygmies of central Africa: they were

known to Homer³⁰ and appear on the François Vase of the early sixth century BC, but in these instances were generic rather than specific. By contrast the "small men" in West Africa seem actually to have been encountered, although perhaps in a region somewhat north of their normal range, as least as it is understood today.³¹

In addition to these many settlements, Greeks established a handful of trading posts in areas that were already populated, most notably Naukratis in Egypt, about 40 miles up the Kanobic mouth of the Nile on the left bank. It was a joint foundation of at least 10 Greek cities, all in eastern Greece or the adjacent islands, with Miletos perhaps taking the lead, and at first holding a monopoly on Greek trade with Egypt. Herodotos implied that it was created at the urging of the Egyptian king, Amasis (570–526 BC), which is when it flourished, but pottery suggests an original date in the seventh century BC.³² Needless to say it was different from a Greek town in a previously unsettled area, and the involvement of so many Greek states created a pan-Hellenic atmosphere unusual for the era, allowing Greeks to learn about Egyptian culture and civilization as well as what lay up the Nile and down the Red Sea. The tradition that Greek intellectuals visited Egypt as part of their education, beginning with Thales,³³ however debatable, is perhaps a metaphor for these cultural ties, and there is no doubt that prominent Greeks of the Archaic period spent time in Egypt or Naukratis.

In the Levant, there was a Greek post at al-Mina at the mouth of the Orontes River in Syria, just downstream from the site of the future city of Antioch-on-the-Orontes. Mycenaean had been in the region and, from the ninth century BC, there were settlers, probably from Euboia. The flourishing period of the settlement was during the seventh and sixth centuries BC.³⁴ Because the evidence is archaeological rather than literary, only the material culture is known, but presumably al-Mina provided a Greek window onto both the Phoenician cities just to its south and interior Syria.

The importance of this expansion of the Greek world from the eighth through the sixth centuries BC cannot be

overstated. By the time the era came to an end and the Greek world was turning its attention to another type of expansionism, that of the Persians, the Greek horizon extended far beyond the coast of the Mediterranean. Greeks living in distant cities such as Massalia and Olbia were learning about the interior of Europe; those in Kyrene and the eastern trading posts became aware of sub-Saharan Africa and interior Asia. The Mediterranean was no longer the limit of Greek geographical knowledge. In most cases the information that reached Greeks on the coast was derivative, and in fact few traveled far inland from their own cities. One who did was Aristeas, from Prokonnesos, near the entrance to the Black Sea, who penetrated into the regions far to the north of the sea. Herodotos dated him to the early seventh century BC but he may be somewhat later.³⁵ A figure hidden in myth, with cultic overtones, he also appeared more than 200 years later at Metapontion in southern Italy. He is credited with being the author of a hexameter poem called the *Arimaspeia* (named after one of the peoples he was seeking), which seems to have been still available in the first century BC,³⁶ yet both Aristeas and the poem are shadowy, and some of its extant fragments may be forgeries from the fourth or third centuries BC. The poem records a six-year journey north of the Black Sea, the first Greek penetration into this region.³⁷ One of the goals of Aristeas' trip was to find the even more mysterious Hyperboreans, those "beyond the north"—a descriptive term rather than an ethnym³⁸—but he only went as far as the Issedonians, who nonetheless were a great distance to the east.³⁹ It has been intriguingly speculated that the Hyperboreans might have been the Chinese, although there is no proof of this and, even if so, there was no contact between them and the Mediterranean world for centuries.⁴⁰ It may be impossible to untangle the three personas of Aristeas: the legendary cultic figure, the traveler to the far north, and the author of the *Arimaspeia*, yet if the poem is genuinely from the seventh century BC, it is the first quasi-geographical work in Greek literature. Aristeas may even have been sent by the city of Prokonnesos in the early years of the settlement to reconnoiter

the far north: such travels are reasonable as Greeks settled on the Black Sea and began to show interest in the potential value of its hinterland.

Yet it is in the nature of trade routes that rarely would any single person travel their entire distance (those who went from Kyrene to sub-Saharan Africa are an exception), but goods were handed off and received at various way stations to or from those traveling the next segment, a process repeated many times. Information on what lay beyond was transmitted the same way, but was subject to misinterpretation, or provided in such a manner as to be incomprehensible by the time it reached the coast: the misunderstanding of the Alps and Pyrenees is a good example. Nevertheless a large amount of information was collected during these centuries, and by the latter sixth century BC the Greek horizon was astonishingly broad, so that Hekataios of Miletos was able to report on essentially the entire Mediterranean and Black Sea coasts (with some exceptions for the Phoenician territory).

The First Greeks Outside of the Mediterranean

As early as the seventh century BC, Greeks began to sail beyond the Mediterranean and the Black Sea. There was only one way of leaving them: through the Pillars of Herakles. Everywhere else the seas were enclosed and their coasts had been explored. About 630 BC (a synchronism is provided with the foundation of Kyrene), a few generations before the Massalians penetrated the Atlantic, a ship captain named Kolaïos, from Samos, who normally made the Samos–Egypt run, was blown off course to Platea, an island several hundred miles west of Egypt.⁴¹ This diversion is not improbable, since if winds had prevented him from making Egypt, he might have headed for Platea, the only known Greek settlement on the north African coast, a predecessor of the future city of Kyrene. Putting out to sea from Platea, Kolaïos allegedly headed for Egypt, a coastal sail of about 500 miles. Instead, an easterly wind blew him to the west, and he could not stop until he was through the Pillars of Herakles, a distance of about 1,100 miles. Fortuitously he ended

up at Tartessos, biblical Tarshish, the wealthy region of the southwestern Iberian peninsula. He was said to be the first Greek to visit this area. He returned home to Samos with 60 talents of goods; the government of the island took a commission of 10 percent and used it to provide art for their famous temple of Hera.

This is all that is known about Kolaios, a story told only by Herodotos. There is little doubt about the results of the endeavor, and that it was the earliest Greek attempt to gain access to the wealth of southwestern Iberia. It is unlikely that Kolaios would have been welcomed in a Phoenician port such as Gadeira, especially if his motive was to tap into the area's resources for profit, so presumably he made some contact with the locals outside the Phoenician trade system and returned to Greece before he ran into difficulties. There is no reason to suspect any part of Kolaios' story except the storm of Homeric proportions that sent him to Tartessos. He may have decided, after ending up in Platea—outside the region where he was known—to strike out on his own and to act on the rumors of western wealth that had been penetrating back to Greece, eventually explaining the incident to his associates on Samos by means of the storm. Yet to be blown from Platea to Tartessos is essentially impossible: to say nothing of the matter of provisions, Kolaios would have had to negotiate the Sicilian Strait between Sicily and Africa, requiring changes of course. It was also remarkably convenient that the winds allowed him to thread the eye of the needle that was the narrow strait between the Pillars of Herakles and which led to the Atlantic. Kolaios belongs in that long tradition of seamen who claim to have been blown off course only to make a momentous discovery, but who probably knew all along where they were going and why. Nevertheless he made the world beyond the Mediterranean available to the Greeks. Shortly after his time, the Tartessian king, Arganthonios, who reigned 80 years, entered into a relationship with the Phokaians, perhaps an indirect result of Kolaios' voyage, and financed their defense against the Persians in the mid-sixth century BC.⁴²

There is another hint of an early Greek traveler into the Atlantic, a certain Midakritos, who was the first to import *plumbum album* (tin) from Kassiteris Island. A single sentence in the *Natural History* of Pliny is the sole source for his activities.⁴³ "Kassiteris" is a Hellenized Elamite word meaning tin, known since earliest times,⁴⁴ so Midakritos went to the Tin Island and brought the metal back to the Mediterranean. No date is provided, but he must have been not much later than Kolaios. He may have been either Phokaian or Massalian. Tin originally came to the Greek world from the east, as the Elamite word demonstrates, but Midakritos represents the opening of new western supplies. The Kassiteris Island—the name is usually plural, Kassiterides—is not easily located: Herodotos suggested that they were in the far west but knew nothing about them.⁴⁵ The most detailed account of the islands is by Strabo, written hundreds of years after Midakritos and showing no awareness of him.⁴⁶ It relates how they were located in the open sea at the latitude of Prettanike (the British Isles) and opposite the European mainland, yet beyond Lusitania, somewhere up the Atlantic coast. There were ten of them, and they were inhabited by people in black cloaks who carried wands. The islands had mines of tin and lead, which were near the surface, originally exploited by Phoenicians from Gadeira, who kept their location hidden. The Romans unsuccessfully tried to find them, perhaps in the context of Caesar's activities in Gaul, but eventually they were forgotten. Modern topographical analysis has been inconclusive, and it is not even certain whether they were islands or coastal promontories, and no identifiable group of ten islands exists off the coast of Brittany or the British Isles, although the topography of this region has changed significantly. In early modern times the Scillies were the most popular suggestion, but they have fallen out of favor recently, and topographers probably no longer have any chance of locating them.⁴⁷

Exact identification seems unnecessary to understand Midakritos' journey. In his quest for tin, he was remembered long thereafter—even if certain details of his voyage had been lost—and he went much farther than Kolaios—as far as

northwestern France. Tin had been known in this region since the Late Bronze Age,⁴⁸ but any supply to the Greek world may have been disrupted by the Phoenicians, and Midakritos found a way to avoid them, much as Kolaios had.

It is possible that a report on the voyage of Midakritos was one of the sources buried in the *Ora maritima* of Avienus of the fourth century AD. This is purely speculation, but at the very least the anonymous *periplous* of the *Ora maritima* is from the same environment as Midakritos. The account begins at the unknown place known as the Oistrymnic Bay, a toponym associated with northwestern Brittany. It then moves south, passing coastal places that have not been located, until it reaches Tartessos and Gadeira, then the Pillars of Herakles and the Iberian and Ligurian coast, ending at Massalia. A considerable amount of sailing data is included, and the earlier and more remote parts are, expectedly, more uncertain than the description within the Mediterranean. Its extremely late date, and the use of the Latin language for material originally presented in Greek, create numerous problems of interpretation, but there is little doubt that it is evidence for an early exploration of the Atlantic coast, almost certainly Phokaian or Massalian, north of the Pillars and as far as Brittany. Mention of the Hierni and Albiones suggests knowledge of Ireland and the British Isles.

Midakritos' attempt to open up a sea route to western tin supplies was eventually futile. The rise of the Carthaginians in the latter sixth century BC disrupted these activities, and the voyages of Kolaios and Midakritos became isolated incidents rather than the beginnings of a continuous pattern of trade, although some imprecise details of their travels were remembered. By Roman times even the location of the Tin Islands had been lost.

The Massalians were also curious about what lay south of the Pillars. Learning about it was assigned to Euthymenes, who is little known today.⁴⁹ He is not cited by name in extant literature before the Roman period, when it was reported that he had sailed on the Atlantic Ocean. He also appears on a list of the first century AD positioned between Thales and

Anaxagoras, which would seem to place him around 500 BC. This was the time of the peak of Carthaginian exploration, and the Massalians may have heard enough to want to make their own reconnaissance. Euthymenes reached a west African river which was so large that fresh water went far out to sea, and which contained crocodiles and hippopotami.⁵⁰ He believed—in part because of their presence—that this river connected to the Nile, and he may have seen a strong flood tide that pushed water upstream. No other details are preserved.

It is not possible to identify the river with precision, but the most probable is the Senegal, the northernmost major tropical river of west Africa, which has the phenomena described. If Euthymenes went that far, it was an important journey, perhaps designed to inspect the Carthaginian presence, especially if the Massalians had learned about an explorer from Carthage, Hanno, who penetrated the same region at about the same time.⁵¹ But Euthymenes seems to have learned nothing that interested the Massalians, who made no further effort to visit the west African coast. Like the voyage of Midakritos to the north, that of Euthymenes was largely forgotten and Greeks tended to stay off the Atlantic as long as the Carthaginians were in power.

The Effect of the Persians

The Greeks, seafarers by nature, usually did not explore the interior of the lands adjacent to the Mediterranean but relied instead on trading reports reaching the coast. But, at the eastern end of the Greek world, changes were occurring that had a profound effect on Greek geographical knowledge. Ever since the early sixth century BC the Anatolian Greeks had been subject to the political authority of the Lydian kingdom, centered three days inland at Sardis. Early in the following century, King Alyattes made a treaty with the eastern Greeks, who became highly prosperous through trade with Lydia. Alyattes' son, Kroisos (Croesus), who came to the throne about 560 BC and was fabled for his wealth, ruled with a somewhat heavier hand, yet the Greeks continued to flourish. Stories of

Greek advisors at Kroisos' court, most notably Thales of Miletos, whether or not true, are demonstrative of the symbiotic relationship between the eastern Greeks and Lydia. Then, suddenly, probably in 546 BC, Kroisos overreached himself and the Lydian kingdom was destroyed by Cyrus of Persia. The Persians—about whom the Greeks had previously heard little—inherited the Lydian kingdom, including its Greek possessions, inaugurating two centuries of a contentious relationship.⁵² Whatever the political situation, Persian control of eastern Greece had its impact on geography, making Greeks aware of the great expanses of the inhabited world to their east. The Royal Road from western Anatolia to the heart of Persia became a major feature in Greek understanding of eastern geography.⁵³ First mentioned in Greek literature by Herodotos in the context of the visit of Aristagoras of Miletos to Kleomenes of Sparta in 500 BC,⁵⁴ it was already well known to the Ionian Greeks, with parts of the route probably existing since prehistoric times. Herodotos outlined its 111 *stathmoi* (stations or stages), measured in Persian parasangs, presumably obtained from an official Persian record available in Miletos or Sardis. The road continued to be of geographical significance into the Roman period. In the first century BC, Isidoros of Charax described portions of it in his account of the Parthian route from the Euphrates to Arachosia.⁵⁵

The Persians, then, opened up the eastern horizon for the Greeks. Greeks also learned about Cyrus' homeland of Persia, and Cyrus himself ranged far, capturing Babylonia in 539 BC.⁵⁶ Much of the following decade was spent in an eastern expedition that ended up in the land of the Massagetians, east of the Caspian Sea, who killed Cyrus in the summer of 530 BC.⁵⁷ The circumstances of Cyrus' fate were widely reported, providing Greeks with their first knowledge of a world that extended to, and beyond, the Caspian.

Cyrus' son and successor, Kambyzes, captured Egypt for the Persians in 525 BC, which put Naukratis under Persian control, yet he encouraged trade and many Greeks came to Egypt at this time.⁵⁸ He also allegedly went up the Nile to the First Cataract

and sent a reconnaissance to investigate the Aithiopians, with a view to annexing them. A few of their northernmost regions were conquered but the value of the expedition was its report on their ethnography, although largely of a fantastic nature.⁵⁹ Yet Greeks became aware of exotic flora and fauna, such as ebony and elephants.

Kambyzes' eventual successor, Dareios I, who came to the throne in 522 BC, sent an expedition far east to investigate India, a region unknown to the Greeks. The toponym "India" ("Indike" in Greek) originally referred merely to the Indus valley, although by Hellenistic times the term had expanded to include the entire sub-continent. The Persians had previously reached its borders and had subdued some of the Gandarans.⁶⁰ Dareios' explorers, who were in the region shortly before his Skythian expedition of 513 BC, did not go beyond the Indus valley, and even in the fifth century BC it was believed that everything to its east was a deserted sandy region.⁶¹ The king was particularly interested in the Indus River, and commissioned an expedition to sail down the river and to return west to Persis. It started from Kaspatyros—whose location is unknown but which must be on the upper Indus system—and after 30 months came to the mouth of the Red Sea.⁶² A Greek named Skylax, from Karyanda in Karia, took part in the cruise, and was asked to write a report, perhaps titled *Circuit of the Earth*, which included comments about flora and fauna, the social structure of the Indians (with the earliest allusion to the caste system), and other ethnographical data, including descriptions of anatomically improbable peoples.⁶³ Although the title of his treatise seems grandiose, Skylax's lengthy sail along the coast of the Indian Ocean, previously unknown to Greeks, may have made it seem that he had made a circuit of a significant part of the entire earth.

The scant fragments that survive of Skylax's treatise are confused: Herodotos said that the Indus headed east (the river actually runs south by southwest), and 30 months is a long time for the journey, but perhaps there was no reason for speed if it were an intelligence-gathering project. There are no surviving details of the actual cruise from the mouth of the

Indus to the Red Sea, and in fact these coasts remained essentially unknown until the time of Alexander the Great. Skylax's report stands in isolation: if it were a personal document for Dareios,⁶⁴ it may not have circulated widely and even Herodotos, slightly less than a century later, probably heard about it only through hearsay. Neither Eratosthenes, Poseidonios, or Strabo—the three most assiduous Greek writers on geography—seems to have known about the report, although Strabo knew about Skylax but provided no details.⁶⁵ Nevertheless Skylax's treatise, however ephemeral, is of great significance, for it is the first known Greek work to devote itself solely to a geographical topic. With Skylax the concept of geography and geographical writing were closer to coming into existence.⁶⁶ Moreover, the voyage of Skylax made the Persians—and thus, to some extent, the Greeks—aware of the Indian Ocean: Dareios I was said to have “made use of the sea,” although the evidence of pre-Hellenistic travel on it is scant.⁶⁷

Dareios was personally responsible for another expedition to the perimeters of the Persian world: against the Skythians in Europe, with “Skythian” the generic term for the peoples beyond the Black Sea. A contingent of Greeks accompanied the expedition, which set forth in 513 BC, bridging the Bosphoros and then the Istros, and penetrating a short distance beyond the latter. This was territory known to the Greeks since the time of the first settlements along the Black Sea (hence their involvement),⁶⁸ but the journey provided an opportunity to compile a detailed ethnography of the Skythians and their unusual habits,⁶⁹ firmly placing the customs of remote peoples within the emergent geographical tradition.

Thus by the end of the sixth century BC the circuit of Greek geographical knowledge included the Atlantic coast of Europe as far as the British Isles and perhaps Ireland (although these were little more than toponyms of uncertain location). The rivers of western Europe were known, but the Alps and anything that lay to the north of them were still vague, except perhaps for the amber route to the Baltic. The coast of the Black Sea was heavily populated, and there was some understanding of the adjacent interior and the peoples who lived along the

great rivers, but with many uncertainties and gaps. Most of Anatolia had been explored, and the Persians provided selective data about Babylonia and Persis, as well as some of the Caspian region and India, and the routes to those places. Yet entire regions within this perimeter, such as the eastern Iranian plateau, were barely comprehended. Skylax had seen the coast of Asia and Arabia but seems to have provided little detail about it. The Red Sea, upper Nile, parts of Aithiopia, and the east African coast were known from Egyptian and Persian sources, and it was understood that Africa could be circumnavigated, but there was no information about the interior of the continent beyond a few caravan routes leading south across the Sahara. The Phoenician settlements on the Atlantic coast provided some awareness of that region. Surrounding all these lands was the great External Ocean, comprehended in some uncertain way since the time of Homer, and whose existence was no longer doubted. It connected to all other seas, including the Mediterranean, Black, and Red Seas, with the only exception the Caspian, which was an enclosed sea.⁷⁰ Data were also being gathered about those who lived in these regions and on these coasts, and what their customs were, yet it is doubtful that this information was coordinated in any particular way. The exact relationship of the landmass to the External Ocean was as yet undefined, and no one had seen any part of the Ocean from the Atlantic coast of France around to the north and east, and on to the west coast of India. Yet the leading minds of the era were coming to the conclusion that the earth was a sphere.

Hekataios of Miletos

It was Hekataios of Miletos who wrote the first general geographical treatise.⁷¹ A distinguished citizen of his home city, he (futilely) advised Milesians not to revolt from Persia in 500 BC, using his geographical and historical expertise to suggest that engaging the Persians was unwise because of their great extent and power, perhaps the first documented example of the use of geography for political reasons. He also said that

the Milesians' only chance for survival was to develop their sea power. When the revolt and subsequent Persian retaliation came, Hekataios was one of the peace negotiators. He spent time in Egypt: unlike the formulaic association with Egypt on the part of earlier Milesian intellectuals, there is enough detail not to doubt the story. He was also said to have traveled widely, and came to be seen as a pioneer of geographical research.⁷²

Hekataios' geographical treatise was either titled *Periegesis* (*Leading Around*) or *Periodos Ges* (*Circuit of the Earth*).⁷³ He was an innovative author, one of the first to write in prose, and his titles represent new terminology, although Skylax may have used the latter one a few years previously. Herodotos, for whom Hekataios was an important source, called him a *logopoios*, a "maker of stories," not a pejorative term but one that also relates to the use of prose.⁷⁴

Although the treatise was still available in Hellenistic times—Eratosthenes and Strabo consulted it—its authenticity became disputed, and, as geographical knowledge increased, it became less viable.⁷⁵ Today there are more than 300 fragments preserved, most of which are simple topographical entries in the late antique *Ethnika* of Stephanos of Byzantion, probably from the sixth century AD. Many of them consist merely of the toponym and a note as to whether it is from the European or Asian book of the treatise, demonstrating the wide range of the work but adding no local color. The division of the toponyms into these two categories is probably the earliest attempt to understand the inhabited world by means of continents, although the word "continent" (*epeiros*) does not appear in the extant fragments, which proves nothing: it merely meant "land" to Homer (what the Achaians drew their ships onto), and its first extant use as "continent" was by Aeschylus, as Atossa grimly remarked that Xerxes depopulated an entire continent.⁷⁶ To Hekataios there were only two continents, with their division uncertain. Herodotos knew two possible lines of separation: either Lake Maiotis and the Tanais River (the modern Sea of Azov and Don River) or the Phasis (modern Rioni) River.⁷⁷ The former prevailed, accepted by the

fifth-century BC author of *Airs, Waters, and Places*.⁷⁸ Hekataios seems to have had no conception of Libya (Africa) as a third continent, since fragments from that part of the world are variously ascribed to Egypt, Asia, Libya, or merely to the *Periegesis*.⁷⁹ By the time of Herodotos the third continent of Libya was taken for granted, and there were no new continents until the discovery of the New World, although the Pythagoreans suggested the existence of others. Whether or not this was so, it became a persistent topic from the fourth century BC.⁸⁰

Any theory that Hekataios may have had about continents cannot be determined from the extant fragments. Eratosthenes told how Greeks first came to Karia in Anatolia, saw that things were different, and that somehow continental theory developed from this encounter.⁸¹ But he was uncertain about the tale, which sounds more anecdotal than scientific, and Strabo, the extant source, chided Eratosthenes for not expressing himself clearly. Nevertheless the story does imply that differences in ethnicity may have been behind the first ideas about continents.

Hekataios may have made a map, although the evidence is uncertain and is subject to the usual problems of the Greek terminology for cartography.⁸² It is said that he improved the map of Anaximandros, but in a famous passage Herodotos ridiculed mapmakers who made the world symmetrically round, with Asia and Europe of equal size.⁸³ The citation of only two continents—when Herodotos knew full well that there were three—suggests Hekataios as a source, although Herodotos' polemic includes more than one map maker. Maps were certainly topical in the Miletos of Hekataios, where Aristagoras used one (perhaps even drawn by Hekataios) as a political tool, with unfortunate results.⁸⁴

Possibly connected with an interest in maps was the development of the concept of the meridian: the north-south line connecting points of equal longitude. The Greek word for meridian, *mesembria*, means "midday," since when it is noon at a given point, it is also noon at all points on the same meridian. The word (in its geographical sense) is not

documented before the fourth century BC, but the concept is earlier, and may have originated with Hekataios.⁸⁵ The first extant attempt to create a meridian is Herodotos' statement that Egypt, Kilikia, Sinope, and the mouth of the Istros, lay on the same line, exceedingly rough but creating a theoretical connection of far-distant points.⁸⁶

Hekataios' circuit of the earth began in the west of Europe, perhaps using data from Phokaia.⁸⁷ The extant fragments for this region—totally from Stephanos—are names of places and peoples, many of which do not appear in later sources and cannot be identified, but include Tartessos (as a region). The six names from Liguria seem to be limited to the coastal regions, and there is no apparent knowledge of the interior. The topography of Italy includes only the area from the Bay of Naples to the south, except for the islands of Aithalia and Kyrnos (modern Elba and Corsica), with nearly half the names coming from Sicily, representing a world that knew little of the Etruscans (only Aithalia was said to be Etruscan), and where the name "Italy" was still limited to the far south, its place of origin.⁸⁸

In a rare preserved ethnographical statement among Stephanos' toponyms, Hekataios wrote about the prosperity of the Adriatic coast, where the cattle produced calves twice a year and the hens laid eggs twice a day, perhaps an allusion to the fertile lands settled by the Greeks at the head of the Adriatic.⁸⁹ He knew about the Istrian peninsula and the Illyrian coast, as well as the river system of Epeiros;⁹⁰ Strabo's extensive use of the earlier scholar for this region demonstrates that the information was still valuable 500 years later. In addition to the usual toponyms preserved by Stephanos, material on Greece proper includes a long passage on the Pelasgians—the pre-Greek peoples of the Greek peninsula—and their relationship to the Athenians, paraphrased by Herodotos, although this may be from an historical work by Hekataios, not his geographical one.⁹¹ Whatever the source, it shows an early interest in Greek origins and city history, which looks ahead to the efforts of Herodotos slightly later, and demonstrates that history and cultural geography had become

intertwined. Other thoughts about the early demographic history of the Greek world—in particular the Peloponnesos—were preserved by Strabo.⁹²

There are fragments about the Greek islands, Macedonia, and Thrace, but these are almost all isolated toponyms, and the southern Greek islands and Crete are not among the preserved citations.⁹³ Ethnographic comments are rare, except for the peculiar drinking habits of the Paionians, noting that they made oil from milk, perhaps the earliest reference to butter, which was not generally part of the Greek diet.⁹⁴ Data on Skythia are limited, but it is possible that Herodotos' extensive discussion of the Skythians relied on Hekataios.⁹⁵ There are two references to peoples in the Caucasus, which is defined as being in Europe, but it is not clear where the division between the two books of the *Periegesis* comes, and it is probable that the border between the continents had not been precisely established and there was an overlap.⁹⁶

There are a number of citations of places on the Asian coast of the Black Sea and in the Troad, mostly familiar names, as well as the hint that Hekataios may have included some Homeric topographical exegesis (Strabo, an expert on the topic, was not convinced by his arguments).⁹⁷ Many fragments survive from the remainder of Anatolia, as one might expect, but with little detail.⁹⁸ The Levant and interior Asia are poorly represented, yet the account extended as far as India, which was perhaps some of the most recent material in the treatise, implying that the report of Skylax had penetrated to Miletos.⁹⁹ Hekataios also knew about the Caspian Sea and its topography and flora.¹⁰⁰ He seemed uncertain about the data and used the alternative name "Hyrkanian" for the sea, which may have originally been a local ethnym. This was again recent information, probably from the expedition of Cyrus the Great in the 530s BC.

Hekataios' description of Egypt was a prime source of material for later writers, and authors such as Herodotos, Diodoros, and Arrian were indebted to him.¹⁰¹ Hekataios spent time there, and was probably the first Greek to view Egyptian customs with a critical scholarly eye. Not much later

Herodotos seems to have had Hekataios' treatise in hand as he traveled around Egypt, and the slightly polemic tone that characterizes his Book 2 is probably due to an urge to refute Hekataios, who is mentioned by name only once, on a matter of genealogy.¹⁰² Despite the reliance of later authors on Hekataios' description of Egypt, little identifiable detail has been preserved.

The rest of Africa—as Hekataios knew it—is contained in the remaining fragments. There are only four about the Aithiopians and their world, but again he may have provided data for Herodotos, having used the report of Kambyses from the 520s BC.¹⁰³ He did discuss the military tactics of the pygmies, and since it is known that he indulged in Homeric criticism, this may have been an exegesis of the famous comment on pygmies and cranes at *Iliad* 3.6. There are more fragments about Africa west of Egypt (ancient Libya) but the terminology is inconsistent and there is no explicit identification of Libya as a third continent. A number of Carthaginian settlements are mentioned, the earliest reference to this great power.

The frustrating nature of the fragments of Hekataios' geographical treatise does not hide its importance. His access to several hundred toponyms throughout the Mediterranean and Black Sea demonstrates the advance of Greek geographical knowledge in the previous centuries. In addition to the place names that overwhelm the modern survival of the work, there was also mythology and ethnology, and even Homeric topographical criticism. Although specifics are difficult to come by, his knowledge of Skylax, Kambyses in Egypt, and Dareios in Skythia implies composition after 515 BC. Except for interior Asia and up the Nile, the data are coastal: there is little if any comprehension of the interior of Europe. Lacking also is any political history, for despite Hekataios' role as a statesman, there is no hint of the Persians—even though Miletos was Persian territory in his day—or of the Carthaginians or Etruscans, except that a few cities were said to belong to them. He probably did not see contemporary politics as suitable for a geographical work, perhaps reserving such matters for his

more historical treatise, the *Genealogiai*.¹⁰⁴ The opening of this work deserves particular note as the most explicit extant statement about Hekataios' theory of scholarship:

Hekataios the Milesian says the following: I write these things since they seem to me to be true, for the stories of the Hellenes—as they appear to me—are numerous and laughable.¹⁰⁵

This statement was well known to Herodotos¹⁰⁶ and firmly places Hekataios in the new world of scholarly ethnography and geography, not myth and fantasy. Hundreds of years later Strabo put him at the forefront of early geographical scholarship—alongside Homer and Anaximandros—and further honored Hekataios by following his pattern of a clockwise circuit of the inhabited world.¹⁰⁷