THE EDGES OF THE EARTH IN ANCIENT THOUGHT

GEOGRAPHY, EXPLORATION, AND FICTION

James S. Romm

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students of the humanities outside the discipline of classics itself. At times, however, I have been forced to deal at some length with fragmentary works, such as Ctesias's *Indika* and Aristeas's *Arimaspeia*, or to stray rather far from the beaten path of the "great books" tradition. In such cases I have sought to provide enough background information that no reader need feel left by the wayside.

Also in consideration of nonspecialists, I have translated all quotations into English, and transliterated what few Greek words I have chosen to retain. Quoted passages are taken from the editions identified as standard in the *Canon of Greek Literature* or in the *Oxford Latin Dictionary*, except where some other edition offered particular advantages (such as cross-references to a published English translation). I have appended notes or discussion where there are significant disputes over the reading of a text. All translations are my own. Greek verse passages have been rendered into prose, so that linguistic accuracy would not be sacrificed to meter; with Latin this seemed to be less of a concern, and I have retained the verse format of the originals.

One

The Boundaries of Earth

WE WHO HAVE SEEN the whole earth, either as represented on maps and globes or as reproduced in satellite photographs, find it difficult to adopt the perspective of those who have not. The image of a floating blue and green sphere, with sharply defined oceans and continents, has been so thoroughly assimilated into our mind's eye as to become intuitive. However, the great majority of mankind has lived and died without ever glimpsing this image, and even today, many isolated races remain innocent of it. For such peoples, mind must take the place of maps in giving shape and structure to the inhabited earth; where empirical data give out they employ any other means available—theory, myth, and fantasy—to define and depict the space in which they dwell.[1] To us these processes are foreign, as attested by the fact that we have no word to represent them accurately: "Geography" will not do unless modified by some adjective like "conceptual," "imaginative," "mythic," or the self-congratulatory "early."

The Greeks of the archaic and classical periods, conversely, had no word corresponding to our "geography"; neither the noun *geōgraphia* nor the verb from which it derives occur before Eratosthenes of Cyrene, that is, before the third century B.C.[2] By that time the study of the earth had already become an

[1] The process by which such images are created is discussed in several essays in *Geographies of the Mind: Essays in Honor of Historical Geosophy*, D. Lowenthal and M. J. Bowden eds. (Oxford 1976). For the Greek tradition in particular, see Christian Jacob, "The Greek Traveler's Areas of Knowledge: Myths and Other Discourses in Pausanias' *Description of Greece*," *Yale French Studies* 59 (1980): 65–85, and Berger (1904).

[2] See van Paassen 34 and n. 3, 44–45; Nicolet 60. Eratosthenes evidently used some form of the word as the title of his major treatise on geography, which is variously reported as *Geōgraphika*, *Geōgraphoumena*, and *Geōgraphia* (see Berger [1880] 17–18 and frs. III B 76, III B 112, Strabo 1.2.21).

exact science, capable, for example, of measuring the circumference of the globe to a high degree of accuracy. What the philosopher Anaximander did four centuries earlier in drawing the first known world-map would have been considered a branch of *phusiologia* or natural science by his contemporaries; similarly the great travelogue of places and peoples composed by Hecataeus, and the logs of seafarers like Scylax and Euthymenes, were considered offshoots of *historia*, as Herodotus's use of them attests. And the legends of far-off lands enshrined in the works of Homer and Hesiod, whatever their factual or scientific content, could only be characterized as *muthoi*, a word which in this context encompasses the meanings "myth," "fable," and "fiction."

It was from a mixture of these diverse sources—cosmography and natural philosophy, travelogue and traveler's tale, and above all epic poetry—that the archaic Greeks formed their notions about the structure of the earth. For this reason we may fairly lump these various sources together in the investigation that follows, even if under an artificial and anachronistic heading like "geography."

Perhaps the most fundamental act by which the archaic Greeks defined their world was to give it boundaries, marking off a finite stretch of earth from the otherwise formless expanse surrounding it. Without such boundaries both land and sea would become *apeirōn*, "boundless," and in fact they are sometimes so called in the poems of Homer and Hesiod.[3] The epithet attests to the cognitive discomfort which an unlimited extent of space could inspire, in that it is only an adjectival form of *to apeiron*, the name chosen by Anaximander for the "boundless" welter of elements from which the universe had been formed.[4] Whether Anaximander thought of this *apeiron* as "boundless" in terms of its spatial extension or internal nondifferentiation, or both at once,[5] is unclear; but in either case the word implies a formlessness and diffusion that are the enemies of order and hierarchy.[6] The "boundless" earth, therefore, had to be given boundaries before it could be made intelligible. And for the archaic Greeks, who did not yet know the true extent of any of the three continents within their ken, this separation of earth from infinite space was achieved simply by deciding that, in whatever direction one traveled, the land must eventually end and water begin.

[3] For the connection see Hermann Fränkel, *Early Greek Poetry and Philosophy* (Oxford 1975) 262n. 22. The root meaning of the adjective *apeirōn* may be closer to "uncrossable" than "boundless" (see Charles E. Kahn, *Anaximander and the Origins of Greek Cosmology* [Columbia 1960] 231–32), which would explain how a space so designated can also be said to have *peirata* (a scholium of Porphyry on *Il.* 14.200 discusses this paradox at length; cf. *Porphyrii quaestionum Homericarum ad Iliadem pertinentium reliquiae*, ed. H. Schrader [Leipzig 1880] 189–93). However, in an era when geographic distance is measured only in terms of travel (see n. 60 below), the distinction between an unbounded land and one whose boundaries can never be reached was undoubtedly slight.

Boundaries and the Boundless

If an *apeiron* is, in linguistic terms, a space which lacks *peirata* or "boundaries," then the epic poets effectively supplied these boundaries by way of the formulaic phrase *epi peirasi gaiēs*, "at the borders of the earth." These *peirata* or "borders" are purely an imaginative construct and are conceived in only the vaguest

[4] On the nature of Anaximander's *apeiron* see Kirk and Raven 104–21; Kahn, *Anaximander* 231–9; and Uvo Hölscher, "Anaximander und die Anfänge der Philosophie," *Hermes* 81 (1953): 257–77, 385–418.

[5] On the dispute between these two positions see Kirk and Raven 109–10 and Kahn, *Anaximander*, 41–42, 236 n. 5. David Furley has recently suggested a sensible synthesis of these positions (*The Greek Cosmologists*, vol. 1 [Cambridge 1987] 28–30).

[6] Just as, in a doctrine formulated later by the Pythagoreans and by Plato, "all the fair and seasonable things that we experience arise out of the intermixture of the boundless with that which has bounds" (*Philebus* 26a12-b2). W. A. Heidel's article, "*Peras* and *apeiron* in the Pythagorean Philosophy" (*Archiv für Geschichte der Philosophie* 14 [1901]: 384–99; repr. in *Selected Papers*) contains valuable remarks on the opposition of these two concepts, and the "emotional connotations" (see 388–89) of the latter; see also C. J. de Vogel, "La théorie de l'*apeiron* chez Platon et la tradition platonicienne," *Revue de Philosophie* (1959): 21–39. A more far-reaching and comprehensive study has been undertaken by Rodolfo Mondolfo, *L'Infinito nel pensiero dell'antichità classica* (Il Pensiero Classico 5, Florence 1956); see 275–85 for remarks on the role of Ocean in this tradition.

terms; as defined by Ann Bergren in an extensive study of *peirar* and its archaic usages, they represent "the physical extremities of the earth . . . the limit of the human world."[7] At times the word *peirata* is modified by *makra*, "great," which, in this context, might refer either to their remoteness ("greatly distant") or to their extent ("encompassing the entire earth"), or, more probably, to both at once. These "borders," moreover, have no particular location, but are found at every point of the compass. Hesiod even refers to the underworld as one of the *peirata gaiēs* (*Theog.* 622), presumably because it also lies at an extreme distance from his own point of reference, although in this case as measured along a vertical rather than a horizontal axis.[8] Once, in the *Odyssey*, Odysseus uses the phrase to describe the shoreline of Polyphemus's island (9.284)—a "boundary of earth" in a less global but equally final sense.[9]

This last conception of *peirar*, as the shoreline or coast surrounding an island, is represented on the macrocosmic scale by Ocean,[10] the vast "river" thought to surround the landmass formed by Europe, Africa, and Asia. The river Ocean limits the extent of earth in all directions, acting essentially as a physical embodiment of the phrase *peirata gaiēs*; in fact the name "Ocean" is often linked with this phrase in epic poetry, and once we even find a variant *peirata Ōkeanoio*, "boundaries of

[7] *The Etymology and Uses of "Peirar" in Early Greek Poetry* (American Classical Studies 2, n.p. 1975) 22–23, 102–15; see also R. B. Onians, *Origins of European Thought* (Cambridge 1951) 310–13.

[8] Xenophanes shows a similar concern with the vertical boundaries of earth's extent (fr. 28 Diels-Kranz, Kirk and Raven p. 11); cf. Homer *Il.* 8.13–17, *Od.* 11.157.

[9] Bergren uses this passage to advance a parallel between the Cyclops' island and "the other side of the world" (*Etymology and Uses* 27–28), but this seems somewhat strained; although the island reveals certain golden-age features (see Lovejoy and Boas 303–4), it is far from "other-worldly" by comparison with other paradisical landscapes.

[10] On Ocean's role in archaic myth and cosmology, see Albin Lesky, "Okeanos," the third chapter of *Thalatta* (Vienna 1947); F. Gisinger, "Okeanos," *RE* bd. 34 (1937) cols. 2308–10; Berger (1904) 1–3; Kretschmer 35–42; and Ramin 17–26. Other sources are cited below, where the subject is explored in greater detail.

Ocean," used as an equivalent (*Od.* 11.13).[11] Even the non-Greek name of this mythical river may well bespeak its limiting function, for two plausible etymologies, deriving *Ōkeanos* from Phoenician *ma'uk* or from Sanskrit *a-çayana*, would both give it the original meaning "that which encircles" the island of earth.[12]

This scheme of an island earth surrounded by a circular Ocean became a pervasive feature of the archaic Greek worldview, dominating both literary and visual representations of the *peirata gaiēs*. For evidence of its literary impact we may turn to the two great shield ecphrases of early epic, the Shield of Achilles in *Iliad* 18 and the Shield of Heracles in the Hesiodic poem *Shield*.[13] Each of these passages envisions the world in the shape of a shield (that is, round) and girt by Ocean at the outermost rim:

[11] Similar collocations elsewhere in archaic poetry: *Cypria* fr. 7 (Athenaeus 334b), *Homeric Hymn to Aphrodite* 227.

[12] The derivation of the name *Ōkeanos* is still an open question; the first theory I have here cited is supported by A. Schulten, "Die Säulen des Herakles," in *Die Strasse von Gibraltar* by O. Jessep (Berlin 1927) 177; the second, by Berger (1904) 1-2, and Onians (above, n. 7) 249. Both theories, however, are rejected by Albin Lesky (*Thalatta* 65); see his notes for further discussion, as well as G. Germain, *Genèse de l'Odyssée* (Paris 1954) 548–50. Diodorus Siculus refers to "Ocean" as a Phoenician name (5.20.1), perhaps supporting the first theory above. Ancient etymologists usually derived the name from *ókus*, "swift," and *anuein*, "to rise," from the seeming emergence of the constellations out of its waters (see Schol. *Il.* 5.6).

[13] On the Homeric passage see Oliver Taplin, "The Shield of Achilles within the *Iliad*," *G&R* 27 (1980) and E. Vanderlinden, "Le Bouclier d'Achille," *Études Classiques* 48 (1980): 97–126; and on both Homer and Hesiod, Daremberg-Saglio's *Dictionnaire des Antiquités* s.v. "Astronomia." The importance of the shield schema in the *Iliad*, as well as the larger concept of a circumambient Ocean in archaic thought, have been assaulted in a pair of tendentious articles by L. G. Pocock, "The Nature of Ocean in Early Epic," *Proc. African Class. Assoc.* 5 (1962): 1–17, and "Note on *apsorrou Ōkeanou*," *Hermes* 88 (1960): 371–74; these have done little to change the traditional view, however. For an interesting parallel in Aristides' *Panathenaicus*, in which the earth is again compared to a shield, with Athens at its hub, see Laurent Perrot, "Topique et topographie," in *Arts et légends d'espace*, ed. C. Jacob (Paris 1981) 104–7.

> And thereon Hephaestus set the great strength of river Ocean, beside the outermost rim of the shield so cleverly made. (*Iliad* 18.607–8)

> Around the rim Ocean flowed, seeming as if in flood, and surrounded the entire much-embellished shield. (*Shield* 314–15)

This shared image of a circular, water-bound earth, moreover, is paralleled on a visual level in the first Greek maps of the world, which similarly portrayed the earth as a disk of land surrounded by Ocean.[14] In fact the similarity between these visual and verbal images was remarked as early as the second century A.D. by Crates of Mallos,[15] who called Achilles' shield a ***kosmou mimēma*** or "image of the world"; the parallel thereafter became a commonplace among Stoic geographers and critics.[16] (More recently scholars like J. P. Vernant[17] have gone yet further and found other, similarly circular structures attached to archaic views of the city-state, whose round perimeter walls could also

[14] Our best evidence surrounds the *pinax* of Anaximander in the sixth century, cf. Agathemerus (1.1, in Müller *GGM* 2.471); see also Herodotus 4.36, Aristotle *Meteor.* 362b15, and Geminus *Elem. Astr.* 16.4–5 for evidence of round earth-maps in the archaic age. Good discussions of early cartography in Greece can be found in Dilke chap. 2, Kubitschek in *RE* bd. 10.2 (1919) *s.v.* "Karten" (cols. 2046–51), and the authoritative *History of Cartography* by Leo Bagrow (trans. D. L. Paisey, rev. R. A. Skelton, London 1964); also Heidel (1933) 206–7. J. L. Myres's inquiry into the subject ("An Attempt to Reconstruct the Maps Used by Herodotus," *Geographical Journal* 8 [1896]: 606–31) seems to me to be highly speculative.

[15] Following the attribution to Crates of the doctrine recorded in a scholium to Aratus (*Phaen.* 26); see chap. 5, pp. 179–80, below, and Mette (1936); K. Pfeiffer, *History of Classical Scholarship*, vol. 1 (Oxford 1968) 240; and F. Buffière, *Les Mythes d'Homère et la pensée grecque* (Paris 1956) chap. 6.1.

[16] E.g., in Strabo's *Geographies* (1.1.7). See also Eustathius's comment ad loc., and, more recently, Berger (1904) 5; Aujac (1966) 21; Ballabriga 66–67; and Taplin, "The Shield of Achilles" (above, n. 13) 11.

[17] In *The Origins of Greek Thought* (Ithaca, N.Y. 1982); see, in particular, chaps. 6 and 8, "The Structure of the Human Cosmos" and "The New Image of the World." Also, by the same author, *Mythe et pensée chez les Grecs* (Paris 1966), esp. pt. 3, "L'Organisation de l'espace." For the importance of circular constructs within the realm of presocratic philosophy, see O. J. Brendel, *The Symbolism of the Sphere* (Leiden 1977).

be referred to as *peirata* or as a *periodos*; but we shall not have occasion here to pursue this line of inquiry.)

If Ocean supplied definitive *peirata* to the circle of lands, the boundaries which in turn contained Ocean were a more problematic issue. The phrase *potamos Ōkeanoio*, "river of Ocean," in Homer and Hesiod implies no clear conception of another "bank" on the farther side; in fact, early writers seem to have assumed, for lack of evidence to the contrary, that Ocean's waters stretched unbounded toward a distant horizon. Thus, the many passages in epic poetry which describe the sun and stars as arising from or setting into Ocean, and in particular Homer's assertion that Ursa Major lacks a "share of the baths of Ocean" (*Od.* 5.275, *Il.* 18.489), were taken to mean that Ocean's waters extended to the edge of the celestial dome.[18] Moreover, it is doubtful whether Homer or Hesiod had any concept of a "new world" beyond Ocean,[19] although such a concept was later attributed to them (as we shall see in chapter 4 below) by Crates and others.[20] In one intriguing passage of the *Odyssey* Circe instructs Odysseus to "cross through Ocean" (*di'Ōkeanoio perēsēis*) on his way to the underworld (10.508), but this probably means only that he should "coast" along the shore from which he embarked, not that he should seek a new land beyond Ocean.[21]

In spite of its traditional epithet "river," then, the Ocean of

[18] See Berger (1904) 2–4; E. Buchholz, *Die Homerischen Realien*, vol. 1 (Leipzig 1871) 27–33; and Gisinger (1937) col. 2313.

[19] Hesiod, for one, envisions places like the Isles of the Blessed which lie *perēn klutou Ōkeanoio*, "beyond glorious Ocean" (*Theog.* 215, 274, 294), but these are islands and not continents; see Jean Rudhardt, *La Thème de l'eau primordiale dans la mythologie grècque* (Bern 1971) 75. A curious couplet of hexameter verses quoted by Strabo (2.3.5), of unknown authorship but possibly of archaic provenance, claim of Ocean that "No bond of continental land surrounds it, but it pours forth into infinity; nothing corrupts it."

[20] See Mette (1936) on Crates' discussion of Homer's double Ethiopians, 69–74.

[21] Weiszäcker argues strongly for this interpretation in his article on "Okeanos" in Roscher's *Lexikon der Mythologie* (811). For the opposing point of view, however, see Germain, *Genèse de l'Odyssée* (above, n. 12) 529, and Lesky, *Thalatta* 69–70.

the archaic era simply stretches out into unimaginable distance, forming a region beyond the boundaries of earth which was every bit as vast and formless as Anaximander's *apeiron*. As a result of this vastitude, in fact, Ocean presents itself to the early Greeks as a terrifying and unapproachable entity. Just as a mouse placed in the center of an empty room will immediately dash toward one of the walls, so Greek sailors and seamen felt ill at ease when surrounded by large stretches of open water; they were accustomed, even when sailing the comparatively placid Aegean, to hug the coasts and stay within sight of land at all times. The prospect of sailing in waters so wide that no land could be seen was regarded with great apprehension, and open-sea voyages were attempted only under extreme duress.[22]

Two incidents recorded by Herodotus may be taken as cases in point. First, Herodotus records that Sataspes, a Persian nobleman of the early fifth century, was ordered by King Xerxes to sail around the southern coast of Africa, but fear of the distances involved made him abandon the mission:[23]

> Sataspes, son of Teaspis, an Achaemenid, did not succeed in circling Libya, though he had been sent on that mission; for, fearing the length and emptiness of the journey, he turned back. . . . After sailing out [of the Mediterranean] and rounding the promontory of Libya called Solois, he proceeded south; but, after crossing a great stretch of sea, over many months, he remained terrified of the expanse ahead, and turned back toward Egypt. (4.43)

Sataspes experienced this dread even during a coasting voyage, moreover—so that we can imagine how much greater such

[22] The point is made quite forcefully by Seel 38–49, and by Cary and Warmington 43. The Greeks experienced a similar sense of trepidation in their travels to the Black Sea, according to E. H. Minns (*Scythians and Greeks* [Cambridge 1913] 9). The much-touted Hellenic fondness for the sea has probably been over-emphasized; Benveniste reminds us that, although the Greek word for "open sea" (*pontos*) is derived from a root meaning "path," the particular implication is that of "a path in a region off-limits to normal travel" (*Problèmes de linguistique générale* [Paris 1966] 296–98). One factor influencing the tendency toward "coasting" voyages, we note, was the Greek seaman's dread of having to sleep or take his meals while still on shipboard.

[23] Heidel (1933) 207–8, in discussing this passage, notes that Africa was still considered too large to be circumnavigated in Strabo's day (see Strabo 1.2.26).

fears would become in midocean with no land in sight. The same point is illustrated by a later incident described by Herodotus, in which a Greek crew refuses to transport a group of political exiles back to their native Samos and instead drops them off at Delos (about halfway):

> That which lay beyond inspired dread in the Hellenes, who were unfamiliar with those parts; they thought the whole region was occupied by the enemy, and imagined that Samos stood as far off as the Pillars of Heracles. (8.132)

In this case, although the voyage in question is contained within the Mediterranean, the vast distance involved seems to the crew to be reminiscent of Ocean; at least, it is identified with the remote and terrifying Pillars of Heracles, which stood at Ocean's threshhold.[24]

Indeed, since the Pillars or Columns of Heracles—the name usually associated with the twin rocks standing astride the Straits of Gibraltar[25]—afforded the only known connection between the familiar Mediterranean and alien Ocean, they became a vivid symbol of the gateway or barrier between inner and outer worlds. For the most part they stood in the Greek imagination as a forbidding *non plus ultra*, a warning to mariners not to proceed any further. Pindar, for example, adopts this landmark as a paradigm of the limits to human daring, in his celebrations of victorious athletes:[26]

> Now Theron, approaching the outer limit in his feats of strength, touches the Pillars of Heracles. What lies beyond cannot be approached by wise men or unwise. I shall not try, or I would be a fool. (*Ol.* 3.43–45)

[24] In later literature see Apollonius Rhodius, *Argonautica* 4. 637–44, where the Argonauts are prevented from sailing into Ocean on the grounds that this would spell certain death (see chap. 5, pp. 194–96, below); and Seneca's first *Suasoria* (chap. 4, pp. 138–39).

[25] The location of the Pillars later had to be moved to accord with the fact that the Straits themselves had become penetrable (see Strabo 3.5.5). For modern discussions see Carpenter chap. 1; A. Schulten, "Die Säulen des Herakles" (above, n. 12).

[26] Discussed by Heidel (1933) 203–6, and Thomas Hubbard, *The Pindaric Mind: A Study of Logical Structure in Early Greek Poetry* (Leiden 1985) 11–27.

> As a man of beauty, who accomplishes feats beautiful as himself, the son of Aristophanes may set forth on supreme, manly endeavors; but not easily across the untrodden sea, beyond the Pillars of Heracles, which that hero-god set in place, as a famed witness of the furthest limit of seafaring. (*Nem.* 3.20–23)

> By the uttermost deeds of strength did these men touch the Pillars of Heracles, an achievement all their own; let none pursue valor any farther than that. (*Isthm.* 4.11–14)

In these passages Pindar measures the prowess of his athlete-patrons in geographic terms, seeing their victories as journeys into distant space; but these journeys must end, he insists, before they enter the forbidden realm of Ocean. The Pillars have here come to stand for the boundary of the human condition itself: To pass beyond them is the prerogative of god alone, or of mythic figures like Heracles who manage to bridge the human and divine.[27] (Significantly, the only human being who was thought capable of such transgression was the latter-day Heracles, Alexander the Great—as we shall see in chapter 4.)

To some extent, of course, the Pillars really were a ***non plus ultra*** to the early Greeks, since Phoenician naval operations, designed to protect the rich silver trade on the Atlantic coast of Spain, closed them to all non-Punic ships from the late sixth century to around 300 B.C.[28] Furthermore, there is speculation that the Phoenicians deliberately exaggerated reports of dire perils beyond the Straits in order to scare away competitors (the legend behind the proverbial expression "Phoenician lie").

[27] Even Heracles himself, moreover, crossed through this space only with the special permission of the gods (as related by Stesichorus, fr. 7). See also Diodorus Siculus 4.18.5–6, and Strabo 3.5.5, for two later accounts of the tradition behind the Pillars. Paul Fabre conducts a lengthy discussion of these in *Les Grecs et la connaissance de l'Occident* (Lille 1971) 274–94 and n. 479. See also Ramin 105–13; Leon Lacroix, "Herakles, heros voyageur et civilisateur," *Bull. de la Classe des Lettres (Acad. Royale de Belge)* 60 (1974) 34–59.

[28] Attested by Eratosthenes *apud* Strabo (17.1.19 = Berger fr. I B 9); see Schulten, "Die Säulen des Herakles" (above n. 12), esp. 181–83. Schulten's theory that the Pillars originally represented an open-door passage to the Greeks, but that their mythology changed to reflect the historical fact of the Phoenician blockade, is not well supported by the evidence.

We must be cautious, however, in using historical evidence of this kind to explain the largely mythic images which the Greeks attached to the Pillars, and to other distant-world locales as well. Even when such evidence can be accurately recovered—a tricky issue to begin with—it can at best be used to explain the genesis of a particular legend, not its subsequent development and elaboration. Thus, whatever recollection of the original Punic blockade may be contained within the Pillars myth, this landmark soon took on an independent life in the Greek imagination, and more importantly continued to loom large there long after the Phoenicians had been dislodged from the Straits.[29]

Even the Phoenicians themselves, moreover, seem to have felt uneasy and fearful when sailing in the waters outside the Pillars, as attested by what is apparently a Carthaginian explorer's log preserved from the early fifth century B.C. Hanno's *Periplous*[30] or "Coasting Voyage" describes the journey of a colonizing expedition which sailed out of the Pillars and south along the coast of Africa, perhaps as far as modern-day Sierra Leone. It reveals that Hanno, despite his willingness to tackle such a mission, was not impervious to the terrors of Ocean's expanse. As he moves farther down the African coast Hanno reports increasingly eerie phenomena: phantom music heard in the dark (14), rivers of flame (15), and a mountain named "Chariot of the Gods" that seemed to catch fire after nightfall (16). Twice in this final section (14, 16) the explorer matter-of-factly reports that his crew was becoming frightened. At his point of furthest progress Hanno encounters "hairy wild men"

[29] Furthermore, the Greeks located a second pair of forbidding rocks, the Symplegades, at the eastern end of the Mediterranean, where the Phoenicians offered no such impediment. Other such terminal pillars are cited by Heidel (1933) 204 n. 54, 219–20; for Alexander's erection of pillars in the East see the introduction to chapter 4 below. The "Phoenician lie" idea has been put forward not only by Schulten but by How and Wells in their commentary on Herodotus 3.107, and by Hennig (1936) 1.53.

[30] Edited by L. del Turco, *Annone: Il Periplo* (Florence n.d.); for discussion and translation see Carpenter 81–103; Seel 5–8, 49–55; Cary and Warmington 63–68; Fiore 41–43; Aly 317–30; and Carl Kaeppel, *Off the Beaten Track in Classics* (Melbourne 1936) chap. 2.

whom his native guides call *gorillas* (a name subsequently revived by the nineteenth-century naturalists who discovered Africa's great apes);[31] he tries to bring some of the intractable creatures back alive, but in the end must settle for killing them and taking their skins. After this encounter his fleet runs short of provisions and makes for home.

Safely returned to Carthage, Hanno apparently ordered an account of his journey to be inscribed on a votive tablet,[32] and from this inscription the *Periplous* was later—probably in Hellenistic times—translated into Greek. In this new form, as a literary text rather than as a historical document, the *Periplous* circulated widely in the Hellenic world, and was later read and discussed by Roman geographers.[33] No doubt it represented to the ancient readers who thus transmitted it a vivid, firsthand confirmation of the vastness and mystery of the realm beyond the Pillars.

Ocean and Cosmic Disorder

If the seeming infinitude of Ocean was not daunting enough to scare away mariners, moreover, other dangers were thought to render its waters unnavigable once the Pillars of Heracles had been passed. Ocean's stream was said to be thick or sluggish, holding back the progress of ships sailing on it; dense fogs and mists enveloped it; and giant sea creatures menaced passing vessels from its depths. Himilco, another Carthaginian explorer roughly contemporary with Hanno, seems to have experienced all these phenomena in the course of his voyage northward from the Straits.[34] Unfortunately the only account we possess

[31] Although it is doubtful that the *anthrōpoi agrioi* described by Hanno were true apes, since no such creatures resided in the regions he visited; see Kaeppel, *Off the Beaten Track*. The identity of these "wild men" is one of many hotly debated problems in the *Periplous*.

[32] As attested by Aelius Aristides, *Orat.* 48 Dindorf 356.2–5, 12–13.

[33] Cited by Pliny *Hist. Nat.* 2.67.169, Mela 3.90; also Arrian *Indika* 43.

[34] For Himilco see Carpenter 212–14, Hennig (1936) 79–82, Cary and Warmington 45–47, and Berger (1903) 231–32. Pliny the Elder makes brief

of the journey dates from nearly a millennium later, but its author, Avienus, may well have adapted his version directly from the explorer's own log:[35]

> Himilco the Carthaginian claimed that this space can barely be crossed in four months, as he reported he had proved himself by sailing there. For no breeze pushes the craft onward, and a torpid flow of heavy water dulls the ship's progress. He adds this as well, that there is a mass of seaweed among the waves, and, like a hedge, it impedes the prow; notwithstanding, he says, the surface of the sea does not extend into the deep, but the soil is barely covered by a little bit of water. Wild sea-creatures stand in the way on all sides, and sea-monsters swim among the sluggish and lazily crawling ships. (*Ora Maritima* 118–29)

> A dark fog enshrouds the air as if in a kind of cloak, and clouds hide the face of the deep always, and this veil remains throughout the whole of the darkened day. (*Ora Maritima* 386–89)

Though some have seen in Himilco's experience nothing more than an exaggerated account of the Sargasso Sea, where rafts of seaweed and dense fogs create very real obstacles to navigation,[36] his account is also colored by widely held mythic and folkloric notions. A formulaic phrase in epic poetry, for example, labels the open sea (or *ponton*) *ēeroeidea*, "misty" or "airy,"[37] suggesting a "cloak of fog" like that described in Avienus's

mention of the voyage (*Hist. Nat.* 2.67.169), the only ancient attestation besides that of Avienus.

[35] Avienus claims to have consulted Himilco's writings himself (*Ora Maritima* 412–15), though Schulten rejects the passage as an interpolation (*Avieni Ora Maritima* [Berlin 1922] 103). The claim is rejected by Bunbury as spurious (2.686–87, n. 5), but apparently accepted by Hennig (1936) 80. Detailed discussion by Aly 312–17.

[36] See Bunbury 2.703, Note A; Cary and Warmington 46; Hennig (1936) 81.

[37] The intermingling of sea and sky is also illustrated by a classical usage according to which a ship sailing the high seas was said to be *meteōra* or "in mid-air." In addition Aristotle, in an attempt to rationalize the mythic traditions concerning Ocean, suggests that the early poets used this name to designate the stream of water vapor circulating through the earth's atmosphere (*Meteor.* 346b16–347a7; see chap. 5, pp. 178–79, below).

poem. As regards the shallowness and torpidity of Ocean's waters, numerous ancient writers from Plato to Plutarch entertained similar ideas.[38]

In the tendency for Ocean to be seen as foggy, muddy, or both, we sense, once again, a link between this entity and the *apeiron* of Anaximander's cosmology, seen this time in terms of physical rather than spatial disorganization. That is, the "boundaries" separating earth and water, or water and air, seem to break down within the infinitude of Ocean, rendering it a murky and undifferentiated welter of elements like the *apeiron*.[39] The most dramatic illustration of this internal boundlessness comes from another explorer's log, set down somewhat later than the era we are concerned with here but revealing much the same pattern of imagery. Sometime around 300 B.C. the explorer Pytheas of Massilia became the first Greek (as far as we know) to follow Himilco's route to the North Atlantic, eventually reaching the British Isles and possibly Scandinavia.[40] His log, significantly entitled *Peri Ōkeanou* or *Concerning the Ocean*, included the following bizarre account of Ocean's northernmost extent, according to a report by Polybius (34.5.3–4 = Strabo 2.4.1 = Pytheas fr. 7a Mette):

> In these regions obtained neither earth as such, nor sea, nor air, but a kind of mixture of these, similar to the sea-lung, in which . . . earth, sea, and everything else is held in suspension; this substance is like a fusion of them all, and can neither be trod upon nor sailed upon.

As with Himilco's log we cannot be sure what pelagic phenomena (if any) lie behind this strange description, but clearly it is

[38] Plato *Timaeus* 25a, Plutarch *De Facie* 941b; see also Strabo 1.4.2, Seneca Rhetor *Suasoria* 1.1–4, and Tacitus *Agricola* 10. Commentary by Heidel (1933), esp. 203–6, and Tandoi (1964) 131–35.

[39] Jean Rudhardt discusses ancient etymologies deriving *chaōs* from *cheō*, the verb meaning "to pour," and other attempts to associate the qualities of disorder and confusion with liquidity (*Eau primordiale* [above, n. 19] 18–20, 117).

[40] Hennig (1936) 120–37, Cary and Warmington 47–56, Carpenter chap. 5, Seel 59–61, Thomson 143–51. More specialized sources for Pytheas can be found in chap. 4 nn.82, 84, below.

steeped in earlier conceptions like Anixamander's *apeiron* and other kinds of primeval murk. In particular Pytheas's reference to the sea-lung—probably a kind of jellyfish[41]—seems designed to illustrate the intermixture of all matter into a single, homogenous gel, thick enough to impede the seafarer yet too soft for travel by foot.

This physiologic aspect of Ocean's boundlessness becomes more intelligible when seen in temporal terms, as a vestige of a primary stage in cosmic evolution. Ocean, after all, was acknowledged in Greek myth and literature to be immensely old, even to date back to the very beginning of the universe.[42] In two cryptic lines of Homer's *Iliad*, for example, Ocean is described as "the origin of the gods" (14.201) and "he who was framed begetter of all" (14.246),[43] and a similar (possibly derivative) characterization pervades the Orphic hymn to Ocean (no. 83).[44] We shall return to examine these lines at greater length in a later chapter, but for now let us simply note their implication that Ocean, like the *apeiron*, antedates or even gives rise to the rest of the physical universe. The parallel is in fact

[41] The *pleumōn thalattios* is identified as a mollusk by Plato (*Philebus* 21c) and Aristotle (*Hist. Animal.* 5.15.21), but its Latin equivalent *pulmo marinus* evidently signified a jellyfish to Pliny the Elder (*Hist. Nat.* 9.154, 18.85.359). It is hard to imagine given the context that Polybius meant the former rather than the latter creature.

[42] Germain (*Genèse de l'Odyssée* 548) connects the root of the name *Ōkeanos* with Ogygos, an ancient and pre-Hellenic divinity. For the coincidence of temporal and spatial boundaries in antiquity, see the remarks made by Malcolm Baldry in *Grecs et Barbares* (Entretiens Hardt tome 8, Geneva 1961) 27, in response to H. Schwabl's paper on "Das Bild der fremden Welt bei den frühen Griechen." On Greek notions of cosmic prehistory in general, see W.K.C. Guthrie, *In the Beginning* (Ithaca, N.Y. 1957) chaps. 1–2, and Kirk and Raven chap. 1.

[43] There has been dispute over whether these lines represent a truly cosmogonic conception of Ocean; some have thought them to be an intrusion of an irrelevant and non-Homeric idea. The case for a cosmogonic Ocean, the counterpart of Hesiod's Ouranos/Gaia pairing, is convincingly argued by Rudhardt, *Eau primordiale* (above, n. 19) 47–52. See also Berger (1904) 2–3, Kirk and Raven 15–16.

[44] See G. Quandt, *Orphei Hymni* (Berlin 1955) 55. The *terminus ante quem* of the hymn is fixed by Plato's use of it in the *Cratylus* (402b).

drawn explicitly by Plato: In the great cosmogonic speech of the *Theaetetus* he has Socrates suggest that Homer and the other early poets used Ocean as a metaphor for the Heraclitean idea of a universal flux, "the begetter of all flow and motion" (152e; cf. 180d), and in the *Cratylus* (402b) he does the same with the above-mentioned Orphic hymn. While it is unclear whether Plato himself took this interpretation seriously,[45] the fact that it was already current in his day reveals a close link in the Greek mind between the physiologic disorganization of Ocean and its temporal primacy.

It is also worth noting in this context that Ocean, or what Jean Rudhardt has more generally termed "primordial water," is associated in many cosmogonic myths with the primeval monsters or giants that must be overcome before the universe can be properly ordered. Of course this version of Ocean is easier to illustrate in Near Eastern myths than in Hellenic ones,[46] but both Rudhardt and M. L. West claim to have uncovered instances of it in archaic Greek poetry as well.[47] Their conclusions, if accepted, would forge an even stronger link between Ocean's temporal primacy and its physical disorganization: Ocean could in that case be seen as a repository for the cosmic confusion that prevailed before the Olympian era, in just the same way that Zeus (according to Hesiod's *Theogony*) uses the *peirata gaiēs* to imprison the Giants, Titans, and other primordial rebels who had challenged his reign.[48] This pre-Olympian/

[45] Kirk and Raven, for instance, think not (17–18).

[46] The Babylonian Tiamat in the poem *Enuma Elish* is the most familiar example; for other instances cf. Germain, *Genèse de l'Odyssée* (above, n. 12) 529–32; W.J.F. Knight, *Cumaean Gates* (Oxford 1936) 44–45, and Onians, *The Origins of European Thought* (above, n. 7) 248–50, 315.

[47] Rudhardt, for example, points to the cosmogonies of Hieronymus and Hellanicus, in both of which a dragon named Chronos was the first offspring of the primal waters that existed before the creation of the earth (above, n. 19, pp. 12–18, 21). West turns to the fragmentary cosmogonic poem of Pherecydes for his evidence ("Three Presocratic Cosmologies," *CQ* 13 [1963]: 154–76).

[48] Cf. *Theog.* 333–36, 517–19, 621–23, 736–43, 807–13. In the *Works and Days* Hesiod also places the generation of heroes at the *peirasi gaiēs*, although in a much more pleasant and well-ordered landscape (166–69). For the conception of Ocean as a primal murk, similar in nature to Erebos or Tartaros, see Norman Austin, *Archery at the Dark of the Moon* (Bloomington 1984) 92–98; Bernard Moreux, "La nuit, l'ombre, et la mort," *Phoenix* 21 (1967): 237–72. Gregory Nagy describes Ocean as one of several "symbolic boundaries delimiting light and darkness, life and death, wakefulness and sleep, consciousness and unconsciousness" ("Phaethon, Sappho's Phaon, and the White Rock of Leukas," *HSCP* 77 [1973]: 150).

anti-Olympian dimension of Ocean is borne out by the fragmentary remains of Pherecydes' cosmologic poem *Heptamuchos*, in which Ophioneus ("Serpent") is cast into the deep waters of Ogēnos or Ocean after trying to overthrow Zeus; the animus of the monster seems thereby to have become merged with that of the world-encircling river.[49] Similarly in Aeschylus's *Prometheus Bound*, Ocean, represented this time in personified form, befriends Prometheus, the rebellious Titan who has defied the authority of Zeus. Although in this particular case Ocean has himself reached an accommodation with Zeus, nevertheless the bonds of kinship which tie him to Prometheus bespeak the common pre-Olympian heritage of the two.[50]

The entire nexus of associations outlined above—connecting Ocean's role as boundary of earth with its vast extent, impassibility, atavism, and monstrous disorder—is neatly embodied in a set of Greek epigrams, probably Hellenistic in provenance but dependent (like so many of the texts we shall examine below) on much earlier strata of geographic thought. These epigrams were collected in the first century A.D. by Seneca the Elder, as part of his *Suasoriae*, a set of rhetorical exercises extrapolated from historical situations. In this particular *suasoria* (the main argument of which we shall return to in chapter 4), Alexander the Great contemplates crossing Ocean in order to conquer new worlds, while his horror-struck counselors urge him to desist:

[49] M. L. West, "Three Presocratic Cosmologies," 163–64.

[50] Similarly in *Iliad* 20 Ocean alone ignores Zeus's express command to come to an assembly of the gods (7–9), while in the next book, Achilles compares his concessions to Agamemnon with Ocean's grudging respect for Zeus's thunderbolt (21.194–99). In both cases, Ocean exemplifies the kind of lawlessness which must be overcome by the Olympian order if the cosmos is to remain at peace. See Lesky, *Thalatta* (above, n. 10) 80–81; Berger (1904) 2–3.

> This is not the river Simois, nor the Granicus [scenes of Alexander's earlier victories]; if it were not an evil thing, it would not lie here at the world's edge. (Glycon)
>
> It is greatest because of this: It is beyond all things, but beyond it is nothing. (Plution)
>
> This is not the Euphrates nor Indus, but whether it is the endpoint of the land, or the boundary of nature, or the most ancient of elements, or the origin of the gods, its water is too holy to be crossed by ships. (Artemon)

These epigrams, though coined with a view toward rhetorical effect rather than geographic accuracy, nevertheless give a good sense of the numinous awe which surrounded the mythic river Ocean. The last example in particular, with its striking juxtaposition of the phrases "boundary of nature" and the *Iliad*-inspired "origin of the gods," illustrates how Ocean could represent the outer limits of both geographic space and historical time at once, a combination which inspired equal measures of fear, fascination, and reverence.

Roads around the World

We have looked thus far at two forms of circumscription which the archaic age imposed on its model of the earth, the phrase *peirata gaiēs* and the element which was in a sense the physical embodiment of these "boundaries," the river Ocean. Let us turn now to another phrase which also lies deeply rooted in archaic distant-world lore: *periodos gēs* or "round-the-earth journey."

This phrase, it should be noted, takes us onto somewhat different turf than that which we have thus far explored, as indicated by its lack of meter. Whereas the dactylic formula *peirata gaiēs* clearly derives from epic poetry and the body of myth associated with it, *periodos gēs* instead belongs to early prose; in fact its earliest known use is as the title of a scientific treatise

written by the Ionian philosopher Anaximander.[51] However, it is interesting to note that verse narratives too could be referred to as *periodoi gēs*, including, as we shall see below, an important fragment of the pseudo-Hesiodic *Catalogue of Women*. In fact the remarkable range of ancient writers who were credited with a *Periodos Gēs*—including not only Hesiod and Anaximander but Hecataeus, Democritus, Ctesias, and various Hellenistic poets—helps illustrate the ease with which geographic writing crossed the boundaries between poetry and prose, between fact and fiction (a point that will become central in the final chapter of this study).

Just as *peirata*, as we saw above, can denote "boundaries" of various types, so the Greek word *periodos* suggests a whole array of meanings, all derived from the basic idea of encirclement or enclosure: the orbit of a planet, the circumference of a lake, or the tactic by which an army outflanks and surrounds its adversary. In a geographic context the phrase *periodos gēs*[52] embodies this notion of encirclement on a number of levels. In its earliest uses the phrase can be translated "map of the earth," as in Herodotus's scoffing critique of "those who draw (*grapsantes*) *gēs periodous* in a perfect circle, rounder than that made with a compass" (4.36; cf. 5.49, 51). However since the verb *graphō* can mean "write" as well as "draw" it is not entirely clear whether Herodotus here refers to literary or cartographic portraits of the earth; after all the most famous text of the former type, that of Hecataeus of Miletus, was known (by at least some later writers) as *Periodos Gēs*.[53] In fact Aristotle does not bother to

[51] This title is attributed to Anaximander by Suidas (Diels-Kranz 1.14.23, Kirk and Raven fr. 97); see Kahn, *Anaximander*, 81–84, and W. A. Heidel, "Anaximander's Book, the Earliest Known Geographical Treatise," *Proc. Amer. Acad. of Arts and Sci.* 56 (1921): 239–87 (repr. in *Selected Papers*, N.Y. 1980), esp. 240–42 and n. 9.

[52] It is odd that this generic label has not been investigated nearly as thoroughly as its marine equivalent, *periplous*; the Pauly-Wissowa encyclopedia, for example, carries an article on the latter but not the former. However, see the introduction to Gisinger (1929) cols. 522–24 and Berger (1903) 249–52.

[53] On the variant titles, see Jacoby's commentary in *Fr. Gr. H* 1.1 p. 328; idem, "Hekataios," *RE* bd. 7 (1912) col. 2672; and G. Pasquali, "Die Schriftstellerische Form des Pausanias," *Hermes* 48 (1913): 187. Unfortunately only

distinguish between the two meanings, classifying both world maps and literary world tours under the same rubric.[54] It seems, then, that *periodos gēs* initially denotes a genre of geography defined by its all-encompassing scope rather than its medium of representation; it stands for "depiction of the earth's perimeter" in either visual or verbal terms, or perhaps in both at once.[55]

Periodos gēs can also refer, in a more literal sense, to an individual's "journey around the world," so that the orator Demosthenes can speak contemptuously of the *periodos gēs* conducted by a prostitute in search of new clients (59.108). In fact the notion of a "journey" or "route" (*hodos*) present in the word *periodos* seems at least partly active in all early uses of this phrase, even in cases where no such trip had ever been undertaken.[56] Thus Strabo, looking back over the early history of Greek geographic writing from the standpoint of the first century B.C., speaks of these archaic texts as " 'Harbors' and 'Coastal Voyages' and 'Circuits of the Earth' and that sort of thing" (8.1.1), implying that the group classified as *periodoi*, like its marine brethren *limenes* and *periploi*,[57] typically took the form of trav-

late sources, Suidas (Hecataeus fr. 1) and Strabo (fr. 217), attest to the title *Periodos Gēs*, but Herodotus's critique of the existing *gēs periodous* at 4.36 may well be a direct reference to Hecataeus. Pasquali's presumption that only works with maps in them could be titled *Periodos Gēs* is clearly refuted by the passage of Aristotle cited below.

[54] Cp. *Meteor.* 362b12, where he clearly means a visual "map," with *Pol.* 1262a18 and *Rhet.* 1360a34, where the same term is used in a very different context: "It is clear that *gēs periodoi* are useful for lawmakers, since they can there learn of the customs of peoples." See Nicolet 4.

[55] See Berger (1903) 249–50. Diogenes Laertius uses the term *perimetron*, "perimeter," as an equivalent for the cartographic sense of *periodos* (2.2); the other available term seems to have been *pinax*, "tablet," since maps of the earth were regularly inscribed on these (Herodotus 5.49, 51; Agathemerus 1.1; Diog. Laert. 2.2). See Dilke 23–25. In the second century A.D. Lucian uses *periodoi gēs*, in the plural, to stand for "the perimeter of the earth" (*Icaromen.* 6), a sense which Herodotus anticipates when speaking of the *perimetron periodou*, "perimeter of the circuit," of a body of water.

[56] On this whole topic see Christian Jacob, "The Greek Traveler's Areas of Knowledge" (above, n. 1).

[57] On this latter genre, see the *RE* article by Gisinger, "Periplus" (bd. 19.1 [1937] cols. 839–50) and the study by Güngerich.

eler's guides describing daily journeys and stopping-places. Certainly the fragments of Hecataeus's *Periodos Gēs*, from what little can be deduced regarding their original form, suggest this kind of arrangement (although it is unclear to what extent the author portrayed himself actually visiting the "stops" he describes).[58] When describing the whole earth one has to organize one's material in some manner or other, and the orderly, peripatetic sequence of the *periodos gēs* provides an effective scheme:[59] The narrative effectively "leads us around" the perimeter of the earth, as suggested by the alternate title of Hecataeus's work and of others like it, *Periēgēsis* or "guided tour."[60]

Nowhere does the holistic dimension of *periodos* writing emerge more clearly than in the Hesiodic *Periodos Gēs*, a segment of the lost *Catalogue of Women* (its "subtitle" first attested by Ephorus in the fourth century B.C.).[61] This bizarre episode, partly recovered recently in a lucky papyrus find, describes a fantastic midair chase in which the sons of the North Wind fly three times around the earth in pursuit of the foul, birdlike Harpies. In describing this whirlwind flight the poem

[58] The structure of the *Periodos Gēs* is of course conjectural, since its fragments have been recovered almost entirely from a lexicon where they are alphabetically arranged. Aly (308) notes that Hecataeus started his "tour" from the Pillars of Heracles and also ended there, suggesting a circular arrangement.

[59] This is the procedure adopted by later writers, for example Mela (*De Situ Orbis* 3), Dionysius Periegetes (see esp. 62–63).

[60] The idea that early Greek conceptions of the earth were defined by "roads," "guided tours," "voyages," and other routes of travel has been developed extensively by Pietro Janni, *La mappa e il periplo: Cartografia antica e spazio odologico* (Università di Macerata Publicazioni Facoltà di Lettere e Filosofia 19, Rome 1984). To take one prominent example, we find that distances from one place to another are expressed in early Greek texts in travel times: A day's sail, or a day's march, are the first standard units of measurement (see O.A.W. Dilke, *Mathematics and Measurement* [Reading the Past, Berkeley and London 1988] chap. 4). Later, however, such measures are replaced by other, mathematically determined units, like the stade and the mile; that is, earth measurement progresses from a system based on individual experience to one that abstracts and objectifies its data. See Bunbury 1.230–31 and 1.481 note N; Nicolet 4.

[61] Strabo 7.3.9. On the title see Nilsson, "*Kataploi*," *Rh. Mus.* 60 (1905): 178–80. The fragment is discussed at some length by F. Gisinger, "Zur Geographie bei Hesiod," *Rh. Mus.* 78 (1913): 319–28; see also Müller (1972) 66.

conducts an aerial survey of the exotica of the distant world, including Ethiopians in the farthest South, mare-milking Scythians and Hyperboreans in the far North, the Eridanos River and Mt. Aetna in the far West, and the bestial *Hemikunes* or "Half-dogs," perhaps in the East. The episode thus imaginatively takes its audience aloft to gain a bird's-eye view of the earth's perimeter, encompassing in a single glance all four corners of the globe. Unfortunately the fragmentary remains of the *Catalogue of Women* are not complete enough to allow us to say how this visionary episode figured into the larger whole. But we can well imagine that part of its effect, at least, was to expand the poem's dimensions to global scale, surrounding it with a suitably vast and all-encompassing framework. (A similar desire for global scope, we note, lies behind the great travelogues of Io and Heracles in Aeschylus's *Prometheus* trilogy, which, though not specifically identified as *periodoi*, certainly provide a worldwide panorama as backdrop for the Prometheus story).[62]

The term *periodos*, then, as applied to both Hecataeus and Hesiod, implies an encyclopedic comprehensiveness, a turning of the earth's circle through its full 360 degrees. This encyclopedic impulse, in fact, gives rise to one final, late-emerging meaning of the phrase *periodos gēs*: "study of panglobal geography." It was thus that Strabo, for example, defined his monumental survey of world geography in the early first century A.D. (1.3.21, 6.1.2), a work which he also characterizes as a "colossal project . . . concerned with vast things and with wholes" (1.1.23). In a similar fashion Hellenistic geographers like Eudoxus and Dicaearchus took *Periodos Gēs* as a title for

[62] On the geography of the Io speech, see J. L. Myres, "The Wanderings of Io, *Prometheus Bound* 707–869," *CR* 60 (1946): 2–4; J. Duchemin, "La Justice de Zeus et le Destin d'Io," *REG* 92 (1979): 1–54; E. A. Havelock, *The Crucifixion of Intellectual Man* (Boston 1951) 59–63; and Bolton 45–64. The long littany of Io's travels also has a dramatic purpose, that is, to emphasize the suffering of one of Zeus's enemies, as noted by Mark Griffith (*Prometheus Bound* [Cambridge 1983] 12). But for its appeal as a geographic "set piece" see H. C. Baldry, *The Unity of Mankind in Greek Thought* (Cambridge 1965) 18–19.

their treatises on geography, presumably to distinguish their abstract and conceptualized approach from the place-by-place descriptions of earlier writers.[63] Likewise Eratosthenes, the first and greatest member of this Hellenistic school, is praised by Arrian as the most accurate of the Greek writers on India since "he was concerned with the *periodos gēs*" (*Indika* 3.1), that is, with universal principles of measurement rather than with the particulars of individual regions.

"Whole-earth" literature of the *periodos* type, whether framed as poetry, descriptive geography, or natural science, seems to have held a unique fascination for Greek and Roman readers, to judge by the number and variety of works which fall under this rubric. The Hellenistic period in particular saw an outpouring of *periplous* and *periodos* poetry, including the works attributed to Scymnus of Chios, Apollodorus of Athens, Pseudo-Scylax, and Simmias. Even the *Argonautica* of Apollonius of Rhodes, despite its vastly higher narrative ambitions, reveals a certain independent interest in round-the-world geographical description.[64] Later, perhaps in the second century A.D., a versified "world tour" or *Periēgēsis* attributed to Dionysius (subsequently surnamed Periegetes) enshrined the Greek view of the whole earth for late antique and (in Avienus's Latin translation) medieval readers and students. These later examples lie beyond the scope of the present discussion and cannot be presented in detail; but their wide proliferation does serve to illustrate the powerful appeal of the *periodos gēs*, whether in a visual or a verbal medium. They offered their audience a pleasingly synoptic view of the earth's circuit, embellished with curious details of its most exotic phenomena.

[63] For Eudoxus see F. Lasserre, *Die Fragmente des Eudoxos von Knidos* (Texte und Kommentare 4, Berlin 1966) 239–40; for Dicaearchus, Joannes Lydus *De Mens.* 147.1 in Wünsch's Teubner edition.

[64] On the idea of Apollonius's catalogue of heroes as a *periplous*, see J. F. Carspecken, "Apollonius and Homer," *TCS* 13 (1952): 45–46, and Charles Beye, *Epic and Romance in the "Argonautica" of Apollonius* (Carbondale and Edwardsville, Ill. 1982) 22. On Hellenistic love of geographical catalogues see Nita Krevans, "Geography and the Literary Tradition in Theocritus 7," *TAPA* 113 (1983): 208.

Herodotus and the Changing World Picture

By imposing boundaries of these various kinds, then—linguistic, cosmologic, cartographic, and mythic—the archaic age succeeded in carving an intelligible chunk of earth out of the surrounding void. The terrifying *apeiron* of primal chaos was banished to the outermost edge of the globe, where flowed the stream of Ocean, so as to permit a more formal ordering of its central spaces; and this outer region was decisively fenced off from the rest of the world, both by natural impediments and by divine sanction. A two-part earth thus emerged, as defined by the Greek names for the Mediterranean and the Atlantic—"inner" and "outer" seas[65]—or by the frequent use of the phrase *exō tōn stēlōn*, "beyond the Pillars," to denote the entire circle of Ocean and the fabulous lands associated with it.[66] This outer realm, though terrifying in the extreme when actually confronted by sailors and navigators, served as an extremely rich backdrop for imaginative literature (as we shall see in more detail in the following chapters); and in the most panoramic genre of geographic writing, the *periodos* or *periplous*, its enormous span could be glimpsed or even traversed in its entirety.

As the horizon of Hellenic culture advanced, however, and as the myth-based worldview of the archaic era yielded to a more empirical and exacting mode of geographic inquiry, the validity of this imaginative world-map came increasingly into question. By the middle of the fifth century, for instance, the Greeks had begun to peer into the obscurity of the far West from their thriving new settlements in Sicily and Marseille,[67]

[65] Although Ocean's modern name was also in use as early as Herodotus's time: ". . . the sea outside the Pillars, named Atlantic" (1.202). Other common names for the western portion of Ocean include "Great Sea" (*megalē thalassa*), "Western Ocean" (*Hesperios* or *dutikos Ōkeanos*), and "Atlantic sea" (*Atlantikos pelagos*). On the variations see Smith's *Dictionary of Greek and Roman Geography* (London 1878) s.v. "Atlanticum Mare," and Kretschmer 41–42.

[66] See the interesting study of this structural phenomenon, with a survey of relevant texts, by Erik Wistrand, "Nach Innen oder nach Aussen?" in *Göteborgs Högskolas Arsskrift* 52 (1946): 3–54, and the comments by Nicolet (5).

[67] See the comprehensive but poorly organized survey of relevant material by Paul Fabre, *Les Grecs et la connaissance* (above, n. 27). Also Chester G. Starr, *The Awakening of the Greek Historical Spirit* (N.Y. 1968) 41–49; Casson 58–64; Cary and Warmington 21–42; Kretschmer 11–19.

and to a lesser degree into the far East through their contact with the vast and highly organized Persian empire. More important, however, the spirit in which the earth sciences were pursued was rapidly changing. Like philosophy, geography was coming down from the skies and putting its feet on the ground, which is to say severing an original link with theoretical cosmology in favor of real information concerning the distant world—derived either from firsthand investigation or from secondhand reports.[68] At the same time a new medium of scientific discourse, prose, was coming to the fore, and a new generation of prose writers had begun to suspect that the poets, especially Homer and Hesiod, could no longer be trusted as geographic authorities. As a result the question of the *peirata gaiēs* underwent a thorough reexamination in the later fifth century, as is apparent in the writings of the era's greatest revisionist geographer, Herodotus of Halicarnassus.

The main tenet of Herodotus's critique of archaic geography, and the one on which all the others in some sense depend, is his rejection of the legendary river Ocean. He dismisses this mythical entity on three separate occasions, each time in slightly different terms:

> The man who brings up the story of Ocean [in a discussion of the sources of the Nile] moves the debate into the realm of the obscure, and thus avoids refutation. For my part, though, I know of no river

[68] As I have argued elsewhere ("Herodotus and Mythic Geography: The Case of the Hyperboreans," *TAPA* 119 [1989]: 97–117), the idea of a "rise of empiricism" in fifth-century earth science is only one element of a more complex evolution; we must not overlook the fact that the same era saw the beginnings of theoretical and mathematical geography, seemingly an extension of the abstractions of Ionian science (the "double trend" described by Nicolet 58–59). The paradox reveals itself in a note of Paul Friedländer suggesting that the traditional view (see Güngerich 12) of the development of cartography, from general *mappae mundi* to specific lists of harbors and coasts, should in fact be reversed (*Plato: An Introduction*[2] [Princeton 1969] 387 n. 9). In fact geography was developing in several directions at once during this period, but all of its branches were clearly interested in making use of new traveler's reports.

> called Ocean, and I think that Homer, or some other of the early poets, invented the name and inserted it into his poetry. (2.23)

> They *say* that Ocean runs around the whole earth, starting from the eastern horizon; but they don't *show* any evidence for it. (4.8)

> I laugh when I see the many men who draw maps of the world without using their heads; they make the earth a perfect circle, better even than one drawn with a compass, with Ocean running around it, and Asia and Europe of equal size. (4.36)

Given that Ocean, as we have seen, had been a vital and ubiquitous feature of world geography since the *Iliad*, Herodotus's three-part refutation creates quite a dramatic shift in geographic priorities. He first points out (2.21, 2.23) that there is no direct evidence to support such a construct, except for the unreliable testimony of the poets. He then repeats this idea (4.8), this time stressing the circularity of Ocean as his main objection; the earth's perimeter was known to be girt by sea in *some* directions but not *all*. In fact Herodotus had in Book 1 erased the water boundary of the East, by asserting that the Caspian, which had traditionally been considered an inlet of Ocean, was in fact only a landlocked sea (1.203). Since land extends beyond the Caspian, then, "no one knows for certain whether Europe is bounded by sea, either at its eastern or northern extremes" (4.45).[69]

Finally, in his most decisive dismissal of Ocean (4.36), Herodotus moves this critique of circularity to a new level: He associates Ocean with artificial and overly schematic maps of the earth, probably meaning those of Ionians like Anaximander and Hecataeus, which seemed to him much too neatly geometrical and abstract to represent the true earth.[70] In thus turning

[69] On the implications of this change see Kretschmer 17–18, and Berger (1903) 56–57.

[70] See the comments on this sequence of passages by Truesdell S. Brown, "Herodotus Speculates about Egypt," *AJP* 86 (1965): 60–76, esp. 75–76; van Paassen 138–42. For the idea that Hecataeus is Herodotus's main target here see Heidel (1933) 206–7. Herodotus's argument has been misunderstood by commentators who claim that he rejects Ocean simply for lack of evidence (see, for example, How and Wells 170 and Bunbury 165). The matter has been thoroughly explored in my "Herodotus and Mythic Geography" (above, n. 68).

away from the conceptual and geometric solution to the problem of the *peirata gaiēs*, Herodotus makes room for a new kind of distant-world geography, based not on geometry but on what can be learned from reliable informants.[71] Indeed, his own updated version of the world-map, which is introduced by this critique of the old "compass-drawn" model, is closely interwoven with his accounts of the voyages of exploration on which it is based: Scylax's tour of the Indian Ocean under Darius (4.44), and the alleged circumnavigation of Africa by the Persians and Phoenicians (4.42–43). In contrast to the *periodos gēs*, a purely theoretical "journey around the earth," Herodotus attempts wherever possible to follow the tracks of known travelers and to avoid what he calls *aphanes* or "unseen" territory (2.21).

By following these routes of travel outward, like the spokes of a wheel, Herodotus eventually discovers *erēmoi* or "empty spaces" at the edges of the earth, in all directions except the West.[72] We find the word *erēmos* (or its equivalent *erēmiē*), in fact, used at many crucial points in Herodotus's explorations of the distant world:

> Of the peoples we know about, or those about whom we have reliable reports, the Indians dwell furthest east and closest to the sunrise; the region eastward of India is empty (*erēmiē*) on account of the sand. (3.98)

[71] On the Herodotean empirical revolution, see especially van Paassen 117–51 (where the case is somewhat overstated); Kretschmer 17–19, 36–39; Dietram Müller, "Herodot—Vater des Empirismus? Mensch und Erkenntnis im Denken Herodots," in *Gnomosyne: Menschliches Denken und Handeln in der frühgriechischen Literatur*, ed. G. Kurz, D. Müller and W. Nicolai (Munich, 1981), 299–319; and Guido Schepens, *L'Autopsie dans la méthode des historiens grecs du Ve siècle avant J.-C.* (Brussels 1980). The contrast between *opsis*, "eyewitnessing," and *akoē*, "report," is important in this regard, as has been demonstrated in a number of recent studies, particularly in the fascinating book by Hartog, *Le Miroir d'Hérodote* (271–82).

[72] See Hannelore Edelmann, "*Erēmiē* und *erēmos* bei Herodot," *Klio* 52 (1970): 79–86; and Guy Lachenaud, "Connaissance du monde et représentations de l'espace dans Hérodote," *Hellenica* 32 (1980): 42–60.

> North of the Alazones dwell Scythian farmers, who raise grain not for food, but for sale; north of these dwell the Neuri; and the region northward of the Neuri is empty (*erēmon*) of men, so far as we know. (4.17)

> Beyond the [central African] ridge, toward the southern and inland portion of Libya, the land is empty (*erēmos*) and unirrigated, with no beasts, nor shade, nor trees; there's not even any moisture in it. (4.185)

> As to what lies north of the [Thracian] country, no one can say with any certainty what men dwell there; rather, beyond the Ister the territory seems to be empty (*erēmos*) and unbounded (*apeiros*). (5.9)

If terms like *peirata* and *periodos* imply a solid line around the borders of earth, like the shoreline of an island, then Herodotus's *erēmoi* remain diffuse and open-ended, as suggested by the pairing of *erēmos* and *apeiros* in the final passage above. This version of the world is surrounded by an expanse not of sea, but of uninhabited waste. Whether or not there are other inhabited lands lying beyond that waste is an issue that Herodotus leaves unexplored; it would come back to trouble the geographers who followed him, as we shall see in chapter 4.

We also note that in each of the passages quoted above the "emptiness" at the edge of the earth is defined both as a lack of inhabitants, especially when *erēmos* is expanded to *erēmos anthrōpōn* or "empty of men" (as in 4.17), and as a lack of information, in that it separates Herodotus from the region about which "no one knows anything clearly." In fact, the two forms of privation are closely interrelated, since news about distant territories can only travel as far as there are human beings to transmit it; for Herodotus, all contact with these realms is severed if a large, uninhabited tract breaks the chain of communication. Some deserts, of course, can be traversed, but Herodotus distinguishes these limited *erēmoi* from an *erēmos alēthōs*, a "true desert," which has never been crossed (4.19). That is to say, the *erēmos* properly speaking is a terminal space, blocking all inquiry into the regions beyond. In fact, he twice refers to these termini as *makrotata* (2.32, 4.31), the "greatest" or furthest regions, in a way which perfectly combines notions of geographic and empirical limitation: "Those are the furthest things (*ta makrotata*) that can be mentioned."

This close connection between habitation, communication, and secure knowledge helps explain the emergence of yet another geographical term which is first found in Herodotus (and in other fifth-century writers), but which thereafter becomes a standard and ubiquitous usage: *oikoumenē*, or, in its fully expanded form, *hē oikoumenē gē*.[73] Literally this phrase translates to "inhabited earth" but implies more than this, since lands which were thought to contain men (like the Antipodes) were not necessarily included within its scope, while other, uninhabited spaces might well be so included. Rather, the *oikoumenē*, in its most essential meaning, can be defined as a region made coherent by the intercommunication of its inhabitants, such that, within the radius of this region, no tribe or race is completely cut off from the peoples beyond it. Understood in this way, the term *oikoumenē* can be better translated as "known world" or "familiar world," or even (if we take account of the qualifying phrase *huph'hēmōn* or *kath'hēmas* which sometimes accompanies it) "our world." It constitutes the space within which empirical investigation, like that championed by Herodotus, can take place, since all of its regions fall within the compass either of travel or of informed report.

Herodotus, then, divides his conceptual map into an inner and an outer space based not on the physical boundary between earth and sea, as was the case with his predecessors, but on the presence of human inhabitants and the resulting availability of eyewitness information. The terminology Herodotus introduces into the study of world structure, therefore—*aphanes, erēmos, makrotata*, and above all *oikoumenē*—represent a fundamental shift in Greek conceptions of the earth from those implied by *peirar* and *peras*—words Herodotus never uses—

[73] For the history of this term, see the excellent article by Gisinger (1937), and van Paassen 16–24. The brief study by J. Kaerst, *Die Antike Idee der "Oikoumenē" in ihrer politischen und kulturellen Bedeutung* (Leipzig 1903) presents a useful history of the political, but not the geographical, applications of the term.

and *periodos*. The older, more abstract lines of demarcation are, in his era, being displaced by the rapidly increasing body of traveler's reports. Indeed, Herodotus might today be hailed as a pioneer in the development of empirical geography, were it not for the fact that in a number of important cases he shows himself still partially attached to the old abstract model.[74] In one particularly noteworthy passage, to which we now turn, Herodotus introduces into his world-map a circle of *eschatiai* or "most distant lands," a construct which is in part reliant on the mythic tradition of *peirata gaiēs*.

Herodotus's discussion of these lands[75] digresses rather freely from his central narrative, in that it does not concern any of the lands which play a role in the main story of Greece's conflict with Persia. Rather it seems to have been introduced as a purely theoretical conspectus of world structure, perhaps in answer to the passages on either side of it in which Herodotus dispenses with the myth of Ocean. The point of departure for the digression is the wealth of India, a topic which leads Herodotus to the general observation that all distant lands are richer than those close to home:

> The *eschatiai* of the inhabited world have been given all the finest things, whereas Greece has received by far the best mixture of seasons. (3.106)

Herodotus returns to this observation at the end of the digression, closing with a kind of reprise:

> At any rate the *eschatiai*, which surround the rest of the world and enclose it within, seem to possess the things we consider most lovely and rarest. (3.116)

[74] See Immerwahr 315–16, Lachenaud, "Connaissance du monde"; and my "Herodotus and Mythic Geography" (above, n. 68).

[75] On this passage see Immerwahr 49–50, 102–3; R. Falus, "Hérodote III. 108–9," *Acta Antiqua* 25 (1977): 371–76; Lachenaud, "Connaissance du monde"; James Redfield, "Herodotus the Tourist," *CP* 80 (1985): 97–118, esp. 110–12; Seth Benardete, *Herodotean Inquiries* (The Hague 1969) 87–90; and chap. 1 of Marcel Détienne's *Les Jardins d'Adonis* (Paris 1972), esp. 20–21, 36–37.

The material that falls between these two statements describes how the inhabitants of this distant realm harvest its wealth; because of its primarily ethnographic character we shall reserve discussion of it until the next chapter. For the moment let us look more closely at the term *eschatiai*, which like *oikoumenē* becomes standard geographic usage from this time forward,[76] and at the larger picture of the world that it implies. Herodotus here uses the feminine form of the adjective *eschatios*, "final" or "uttermost," so as to agree with an implied noun *gē*, "land"; later authors generally prefer a substantival neuter form, *ta eschata*, sometimes qualified by *tēs gēs*, "of the earth." In either case the word is declined in the plural yet functions as a collective noun, essentially singular in meaning. Thus, in the passage above, the furthest reaches of the earth, in all directions, form a continuous belt of lands, closely joined by common characteristics just as they are set apart from the rest of the world. Moreover, although these lands are attached to the known world (as implied by the partitive genitive in the phrase *eschatiai tēs oikoumenēs*) they are also distinct from it, much as the frame of a painting is distinct from the canvas.[77] The frame-like structure of the *eschatiai* reveals itself quite clearly, in fact, in the final sentence of the digression, in which Herodotus describes these lands as "surrounding" and "enclosing" the rest of the world.

Having dispensed with the aquatic boundary of Ocean, then, Herodotus here establishes a surrogate boundary made up of land;[78] but since this realm is conceived as part of the *oikou-*

[76] Heidel (1933) considers *eschatiai tēs oikoumenēs* to be "the technical term for the limits of the world," but without considering whether Herodotus here coins it (198 n. 29).

[77] Cf. Heidel, ibid.: "The known world is a rather drab affair, but like the death's-head in *The Merchant of Venice*, it is enclosed in a golden casket."

[78] In fact, the adjective *eschatos* or *eschatios* certainly implies—although perhaps not as vividly as the earlier term, *peirata*—a threshhold between two distinct regions, like that at the boundary of earth and ocean. In Homer the places which are described as "outermost," in almost every instance, border on the sea; similarly the *eschatoi anthrōpoi* of Homer's world, the Ethiopians, dwell by the banks of Ocean (a usage echoed by Herodotus, in his account of the Cynetae [4.49], who also dwell beside the Atlantic). Pindar, in a poem we have

menē, it can be empirically verified in a way that Ocean could not be. Thus, if Herodotus partly relies on the mythic tradition he claims to have discarded, he also reorients that tradition so as to place it within the purview of the new science. In fact it is within this digression that Herodotus again (as in 4.45) expresses doubts about the idea that Europe is surrounded by sea (3.115), and rejects outright several other features of mythic geography: the amber-bearing river Eridanus, the Tin Islands, and the race of one-eyed Arimaspians (ibid.). Because the *eschatiai* lie within the realm of informed report, that is, Herodotus is able to bring his investigative and reasoning skills to bear on them, rather than leaving them in an *aphanes* which admits no discussion.

But how should these *eschatiai* be reconciled with the *erēmoi* with which, as we have seen, Herodotus elsewhere surrounds his map of the world? It is curious that we find no mention of *erēmoi* within the above digression, just as in other sections of the *Histories* we find only one brief reference to the *eschatiai* which are so prominent here. Indeed, the two schemes seem to be at odds with one another, and it may well be the case that the *eschatiai* passage (which bears all the marks of a separately composed "set piece") was added later at a time when Herodotus's knowledge of or interest in the distant world had grown.[79] However that may be, it seems clear that the old geometric model of the world, based on the poets' Ocean and the Ionians' world-map, has been quite deliberately revised and reformulated by Herodotus in the Book 3 digression, so as to answer to the concerns of the new empiricism. While accepting the general notion of "boundaries of the earth," and even the approximate circularity of those boundaries, Herodotus contests the mythic grounds on which they had been drawn and raises the possibility of a new system founded on traveler's reports.[80]

already looked at, compares the athlete striving for the *eschatian* of glory to a traveler approaching the Pillars of Heracles (*Ol.* 3.43).

[79] Thus Trüdinger 16. On the incongruities in Herodotus's geography see Immerwahr 163–64; Lionel Pearson, "Credulity and Skepticism in Herodotus," *TAPA* 72 (1941): 335–55; and Kurt von Fritz, "Herodotus and the Growth of Greek Historiography," *TAPA* 67 (1936): 315–40. Pearson overemphasizes the lack of consistency in Herodotus's world picture, so as to make it appear entirely unstructured. Von Fritz posits a developmental scheme in which the incongruities represent different periods in Herodotus's intellectual growth.

Aristotle and After

If Herodotus succeeded in questioning the *peirata gaiēs* established by myth and poetry, however, he was one of few in the ancient world with the courage to attempt this. In the centuries to come many changes were rung on the world-map, but these were the concern of specialists; the general public remained tenaciously committed to the original circular construct. In fact the *peirata gaiēs* idea serves as an illustrative example of one of the most striking features of ancient distant-world lore: its longevity.[81] Despite continuing advances in science and exploration the average citizens of Greece and Rome clung to the conceptions of the earth's edges that best suited their imaginative needs. Even the revisionist authors who tried to set the geographic record straight sometimes ended up endorsing its most extravagant fictions, as we shall see in chapter 3.

A few points of reference will suffice to illustrate the course of the world-map's later development. The first of Herodotus's critiques of this map, his rejection of its strict circularity, did indeed make some headway among later geographers: Agathemerus informs us that in the late fifth century Democritus mapped the earth as an oblong shape, half again as long as wide, and that in the next century Dicaearchus concurred with

[80] Ironically enough, the next revolution in descriptive geography, wrought by the mathematical geographers of Hellenistic Alexandria, discarded the evidence of the traveler's report in order to update the map of the earth (Nicolet 70–72). See, for example, Book 2 of Strabo's *Geographies*, where the fallacious reports of Indian Ocean navigators are said to have impeded attempts to chart the southern extension of the *oikoumenē*.

[81] See chap. 11 of Heidel (1937).

these proportions.[82] Yet at the same time we find Aristotle, a near contemporary of Dicaearchus, complaining in words very close to those of Herodotus about the prevalence of the circular world-map (*Meteor.* 362b11):[83]

> They draw maps of the earth (*tas periodous tēs gēs*) in a laughable manner; for they draw the *oikoumenē* in a very round form, which is impossible on the basis of both logic and observed facts.

Aristotle follows this critique with his own estimate of the length:breadth ratio of the inhabited world, revising Democritus's 3:2 figure to 5:3; but what is surprising is that Aristotle aims his polemic not at his fellow scientists but at the common run of cartographers, who have not yet put aside the "compass-drawn" model Herodotus had scorned.[84] Centuries later Geminus, the obscure author of a brief *Introduction to Astronomy*, is still pleading for an end to round maps: "[In them] the length of the earth is equal to its breadth, which is not so in nature."[85]

The second prong of Herodotus's attack on myth, moreover—his rejection of the circumambient Ocean—found similarly mixed favor in later centuries. One of the chief premises on which this rejection rested was quickly abandoned, as Greek geographers after Aristotle went back to considering the Caspian an inlet of Ocean rather than a landlocked sea. In the Hellenistic period a false report filed by Patrocles, one of the admirals appointed by Alexander the Great, claiming that the Caspian and the Indian Ocean were indeed connected by water, seemed to give irrefutable credence to this idea; it was accepted, for example, by the otherwise discriminating geographer Eratosthenes of Cyrene, who therefore concurred in the idea of a circumambient Ocean (even while rejecting Homer as a useful

[82] Agathemerus 1.1.2, in Müller *GGM* 2.471 (= Diels-Kranz fr. 15); cf. Dilke 25. Heidel (1933) 201 n. 38 believes that the 3:2 ratio is older than Democritus, but does not cite his evidence.

[83] See Heidel (1937) 89–90 and (1933) 201.

[84] Cf. Kretschmer, 13: "Thus we can see how long a time the Ionian maps must have held sway."

[85] Geminus 16.4; see the note by C. Manitius in the Teubner edition (*Elementa Astronomiae* [Leipzig 1898] 275 n. 28).

source).[86] A few Hellenistic geographers, among them Hipparchus and Polybius,[87] joined Herodotus in expressing skepticism about Homer's Ocean; but Strabo takes a giant step backward at the beginning of the Roman era, when he opens his massive *Geographies* with a long excursus (1.1–10) on how Homer's vision of the island earth had essentially been proven correct. (It is at this point that we shall again take up the theme of circumscription, in chapter 4.)

Only in Ptolemy's *Geography*, some six centuries after Herodotus and five after Aristotle, do we find an open-ended scheme of the world again put forward in a systematic way. Like these predecessors Ptolemy understands the Caspian to be a landlocked sea, and therefore claims that the East (as well as the North) is bounded not by water but by "unknown land" (*gē agnōstos*, *Geography* 3.5.1; 6.14.1, 15.1, 16.1; 7.5.2).[88] More important, he gives an explicit endorsement to his predecessors' attacks on Ocean, in the concluding sentence of his excursus on cartography:

> The known portion of the earth should be set out so that it does not have Ocean flowing everywhere around it, but only where the boundaries of Libya and Europe are marked out, in the direction of the winds Iapyx and Thrascia [i.e., West-northwest and North-northwest], in accordance with the ancient historians. (7.5.2)

In this reference to "ancient historians" we should probably see a tip of the hat to Herodotus, who had similarly acknowledged that only certain portions of the *oikoumenē* were bounded by

[86] See Strabo 1.3.14; Thomson 163, Bunbury 1.459, 574.

[87] On Hipparchus see Strabo 1.1.9, and commentary by D. R. Dicks, *The Geographical Fragments of Hipparchus* (London 1960) 114; poorly understood by Aujac (1966) 20–22 and 21 n. 2. For Polybius's view see 3.38 and Heidel (1933) 208.

[88] Gisinger believes this concept may have partly derived from Plato's myth of Atlantis ("Zur geographischen Grundlage von Platons Atlantis," *Klio* 26 [1932]: 38; seconded by J. Bidez, *Eos ou Platon et l'Orient* [Brussels 1945] 38). On Ptolemy's world-map and that of his predecessor Marinus see Berger (1898) 135–41; Kretschmer 42–48; Richard Uhden, "Das Erdbild in der Tetrabiblos des Ptolemaios," *Philologus* 88 (1933): 302–25; and Kubitschek, "Karten" (above, n. 14) cols. 2058–99.

water. But what impresses us most is, again, the fact that this idea had to be restated so stridently more than half a millennium after it was proposed. The last word in our extant record of Greek empirical geography is essentially the same as the first, a refutation of the old, Homeric boundaries of earth.

Two

Ethiopian and Hyperborean

IN THE FOURTH CENTURY B.C. the historian Ephorus published a work of descriptive geography entitled *Europe*, since lost, but known to us in part through the *Geographies* of Strabo of Amaseia. The work, to judge by Strabo's account, seems to have been a rather daring attempt at revisionist ethnography. Ephorus, it seems, had noted a duality in previous Greek accounts of the Scythians—some writers had made them out to be cannibals, others, a race who opposed all taking of life and therefore subsisted exclusively on milk[1]—and decided to emphasize the latter version over the former:[2]

> Previous writers, Ephorus says, only tell about the savagery of the Scythians, knowing that terrible and strange phenomena produce a vivid effect; but he, for his part, says that one must do the opposite of this, and depict exemplary models of humanity (*paradeigmata*). Thus he resolves to write about those Scythians who practice the most righteous customs, like the Nomad Scythians, who are fed on

[1] The significance of the adjective *hippēmolgoi*, "mare-milking," as applied to the Scythians, was variously understood by ancient writers, but certainly the desire to avoid killing fellow creatures was one of its chief components (cf. Pseudo-Scymnus 852–55, Lovejoy and Boas 324). The comic playwright Antiphanes spoofs the tradition by suggesting that drinking milk spares the Scythians from harsh wet-nurses (Athenaeus *Deipn.* 226d). John Ferguson (*Utopias in the Classical World* [Ithaca, N.Y. 1975] 17) supposes that "the scorn of the effect of meat on the mind" may play a role.

[2] The passage is discussed by van Paassen 256–58; Lovejoy and Boas 289–90; B. L. Ullman, "History and Tragedy," *TAPA* 73 (1942): 31; and M. Rostovtzeff, *Skythien und der Bosporus* vol. 1 (Berlin 1931) 80–86. Cf. also A. Riese, *Die Idealisierung der Naturvölker des Nordens in der griechischen und römischen Literatur* (Frankfurt 1875) 11 n. 1. Pierre Vidal-Naquet sees in the shift from cannibalism to vegetarianism here an instance of *coincidentia oppositorum*; see "Valeurs réligieux et mythique de la terre et du sacrifice dans *l'Odyssée*," *Annales* 25 (1970): 1281.