

peninsula combining Persia and India and parts of China was a Ptolemaic feature incorporated by al-Khwārazmī into his tables, and reflected here in a similar peninsula on the rectangular world map. The very prominent Mountain of the Moon and its marshes forming the source of the Nile were also derived from the maps known to be associated with al-Khwārazmī.

It seems likely that the author used a prototype world map that was either based directly upon the tables of al-Khwārazmī or on similar tables, employing an orthogonal projection that resulted in a rectangular shape. Such a map would have included a scale, numerous labels for individual localities, and some distinctive "Khwārazmian" features. Although no such maps survive, there are several references to their circulation. It seems, however, that the author of the rectangular world map had an inadequate understanding of mathematical geography, and did not fully comprehend either the purpose of the scale or the tables of longitude and latitude from which he was copying. Nonetheless, this map, with its unique scale, remains the earliest preserved one providing evidence of a plotted prototype.

NEW PERSPECTIVES ON PARADISE— THE LEVELS OF REALITY IN BYZANTINE AND LATIN MEDIEVAL MAPS

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This paper concentrates on certain aspects of the depiction and description of Paradise during Late Antiquity and the Early Middle Ages which seem to be illustrative of a particular perception of reality and space. The principal focus is on the map of the world in the *Christian Topography*¹ and in the *Commentary on the Apocalypse* of Beatus of Liebana.²

The *Christian Topography* was written anonymously.³ Sources from the eleventh century onwards attribute it to a certain Cosmas Indicopleustes, that is "Cosmas who sailed to India", but the authenticity of this name has been contested.⁴ Though not revealing his name, the author provides some information concerning himself and the circumstances in which his treatise was written. On the basis of the internal references we can establish that he wrote around 547-549.⁵ We know that by then he was already quite old and had retired from his mercantile career, which earlier in life had carried him far in commercial pursuits. He claims to have sailed on the Mediterranean, Red Sea and Persian Gulf.⁶ Although it is not clear whether he ever

¹ See W. Wolska-Conus, *Cosmas Indicopleustes. Topographie Chrétienne, Sources Chrétiennes*, (Paris: Éditions du Cerf, 1968, 1970, 1973), 141, 159, 197. My numbering of the paragraphs of the text follows from this edition.

² See J. Williams, *The Illustrated Beatus. A Corpus of the Illustrations of the Commentary on the Apocalypse*. 5 vols. (London: Harvey Miller, 1994-2000).

³ He only refers to himself as a *Christian*: see *Christian Topography* V:257; VII:1; VII:96-97; VIII:31.

⁴ The name Cosmas accompanied by the epithet *Monk* appears in one of the eleventh century manuscripts of the treatise, Laur.Plut.IX.28, and in the manuscripts of Gospels and Psalters which quote the *Christian Topography* in the commentary. Wolska-Conus, *Topographie Chrétienne*, v.1, 107-115; See also W. Wolska-Conus, *La Topographie Chrétienne de Cosmas Indicopleustes. Théologie et Science au VI^e siècle* (Paris: PUF, 1962), 1.

⁵ For dating of the *Christian Topography*, see Wolska-Conus, *Topographie Chrétienne*, v.1, 16.

⁶ *Christian Topography* II:54-56; VI:1-2.

went as far as India in the modern meaning of this word, we should bear in mind that in Byzantine sources the term *India* designated not only the Indian subcontinent, but also Arabia and Ethiopia.⁷ Thus, because it is clear that the author of the *Christian Topography* travelled at least as far as Axum, there is no need to challenge the appropriateness of his nickname. It is interesting to note that a sixth century inscription found in 'Abu Sha'ar on the Red Sea mentions a certain Andreas Indicopleustes, attesting the use of such an epithet during Late Antiquity.⁸ As to the name itself, Cosmas was very common in Egypt, but it is suspiciously appropriate for the author of the work on the cosmos, and therefore its authenticity should be treated with caution.⁹

Whether the author of the *Christian Topography* was an Egyptian has also been disputed. Snippets of information scattered throughout the treatise make it fairly clear that it was written in Alexandria, and that the author was an inhabitant of that city rather than a visitor.¹⁰ However, his theological views and his exegetical method appear to be as foreign to those of other Alexandrian writers as they are close to those of Antiochene and East Syrian exegetes. It was largely on account of this affinity that an attempt to identify Cosmas with a certain Constantinus of Antioch has been greeted with great enthusiasm by modern scholars.¹¹ In my view this identification is doubtful. It is based only on a short passage of the seventh century Armenian Geography which mentions a certain Constantinus of Antioch as the author of the *Christian Topography*. Unlike Alexandria, Antioch is

⁷ P. Mayerson, "A Confusion of Indias: Asian India and African India in the Byzantine Sources," *Journal of the American Oriental Society*, 113, 2 (1993), 169-74.

⁸ R.S. Bagnall, J.A. Sheridan, "Greek and Latin Documents from 'Abu Sha'ar, 1992-1993," *Bulletin of the American Society of Papyrologists* 31 (1994), 109-20.

⁹ It has been suggested that this name was invented by a later scribe in much the same way as the epithet "Climacus" given to John, the author of the *Heavenly Ladder*. See C. R. Beazley, *The Dawn of the Modern Geography: A History of Exploration and Geographical Science from the Conversion of the Roman Empire to AD 900*, v.1 (London: J. Murray, 1897), 277. Even so, on this basis the author of the *Christian Topography* should have been called Cosmicus rather than Cosmas. See E.O. Winstedt, *The Christian Topography of Cosmas Indicopleustes, edited with geographical notes* (Cambridge: Cambridge University Press, 1909), 2.

¹⁰ For an extensive discussion of the problem, see M. V. Anastos, "The Alexandrian Origin of the Christian Topography of Cosmas Indicopleustes," *Dumbarton Oaks Papers* 3 (1946), 73-80.

¹¹ W. Wolska-Conus, "Stephanos d'Athènes et Stephanos d'Alexandrie: Essai d'identification et de biographie," *Revue des Études Byzantines* 47 (1989), 28-31.

barely mentioned in the *Christian Topography*, and the link with Syrian theology is in fact explained in the passage where Cosmas proclaims himself to be a devoted student of Patrikios, identified with Mar Aba, a Nestorian *katholikos* of Persia, who had visited Alexandria a few years previously.¹² It thus appears that it was through the intermediation of Mar Aba, a student and later teacher at the school in Nisibis, that the influence of the East Syrian and Antiochene exegetes was transmitted into the *Christian Topography*. In fact Cosmas goes as far as claiming that all his knowledge derives from the Bible and his master Mar Aba, since he had not received any formal education. The claim to lack a proper schooling, and in particular the claim to lack any rhetorical ability, is a common literary *topos* usually attesting to the contrary.¹³ In this case, however, it does ring true. In short, the literary style of the *Christian Topography* is not very sophisticated.¹⁴ But dearth of rhetorical skills does not imply dearth of any sort of knowledge. Cosmas may be a bad writer, but he is certainly well read, both in theology as well as in ancient science and philosophy. It should be noted that he engaged in scholarly discussion with John Philoponus, his contemporary fellow citizen of Alexandria, whose scholarship helped to fuel the Renaissance breakaway from Aristotle.¹⁵ Cosmas was an ingenious compiler, and in an effort to understand the world around him he brought together and sought to reconcile a variety of sources which reflect the diverse and complicated milieu in which he was writing.

The original manuscript of the *Christian Topography* is not preserved. There are three Byzantine copies extant, dated to the ninth (Biblioteca Apostolica Vaticana, Cod. Gr. 699) and eleventh centuries

¹² *Christian Topography* II:2; On the identification, see P. Peeters, "Observations sur la vie syriaque de Mar Aba, catholikos de l'église Perse (540-552)," in *Recherches d'Histoire et de Philologie Orientales, Subsidia Hagiographica* 27, v. I (Brussels: Soc. des Bollandistes, 1951).

¹³ Such a claim appears already in the second Pauline epistle to the Corinthians (2 Cor. 11:6). It can be found later, for example, in the works of Theophilus of Antioch, *Ad Autolycum* 1:1, and of Orosius, who at the beginning of his *History* adopts an extended metaphor in which he compares himself to a dog (Preface, 1-8).

¹⁴ See criticism by Photius, who quotes the *Christian Topography* in codex 36 of his *Bibliotheca*.

¹⁵ See R. Sorabji, "John Philoponus," in R. Sorabji (ed.), *Philoponus and the Rejection of Aristotelian Science* (London: Duckworth, 1987), 5-18; also B. Elweskiöld, *Cosmas Indicopleustes and John Philoponus. A Christian controversy on the structure of the world in sixth-century Alexandria* (diss., Lund University, 2005).

(Sinai, Saint Catherine Monastery, Cod. Gr. 1186; Biblioteca Medicea Laurenziana, Cod. Plut. IX.28). All three are lavishly illustrated, and most of the illustrations in all three are the same. This uniformity, and the close relationship between the text and the scientific illustrations, suggest that the miniatures in the preserved manuscripts copy those in the original, sixth century codex. The case of the Biblical illustrations is slightly more complex, but that is a subject for another paper.¹⁶

Cosmas imagines the universe in the form of an oblong, vaulted building, based on the flat earth and divided into two superimposed spaces by the firmament placed in the middle of its height.¹⁷ These two spaces correspond to two states of existence: the state of mortality in the space below where people currently live, and the state of immortality and perfection in the space above, which will open only at the end of times.¹⁸ The revealed image of the world is the tabernacle built by Moses in the wilderness, described in Exodus and depicted in the miniatures of the *Christian Topography*. The Holy of the tabernacle corresponds to the lower space, while the Holy of Holies reflects the upper, heavenly space.¹⁹

According to Cosmas, the earth is flat (Fig. 1). The inhabited earth, placed in the middle, is surrounded by the Ocean, which in turn is encircled by another earth, where in the east Paradise is located.²⁰ Four seas—four gulfs of the ocean—break the outline of the oikoumene.²¹ The rivers of Paradise travel under the Ocean and reappear in the inhabited earth.²² For Cosmas, the revealed image of the earth is the table of the tabernacle. Its description and depiction in the *Christian Topography* (Fig. 2)²³ are based on the Biblical

¹⁶ For the relationship between the text and illustrations, see L. Brubaker, "The Relationship between Text and Image in the Byzantine MSS of Cosmas Indicopleustes," *Byzantinische Zeitschrift* 70 (1977), 42-57. My recently completed Oxford doctoral thesis addresses the question of the sources for the miniatures in the Byzantine manuscripts of the *Christian Topography*.

¹⁷ *Christian Topography* II:20; II:21; III:14; IV:4; IV:9; V:227.

¹⁸ See Wolska, *Théologie et science*, 87-112.

¹⁹ *Christian Topography* II:35-36; III:16; III:51-52; III:55; IV:25; V:1; V:20; V:27. See also Wolska, *Théologie et science*, 113-46.

²⁰ *Christian Topography* II:17; II:19; II:24; II:36; III:52; IV:11.

²¹ *Christian Topography* II:29; II:30.

²² *Christian Topography* II:81.

²³ *Christian Topography* II:19; II:36; V:33-34; Sin.gr.1186, fol. 81r; Laur.Plut. IX.28, fol. 111v. See also: L. Brubaker, "The Tabernacle Miniatures of the Byzantine



Fig. 1. The Earth according to Cosmas, Laur.Plut. IX.28, fol. 92v, eleventh century.

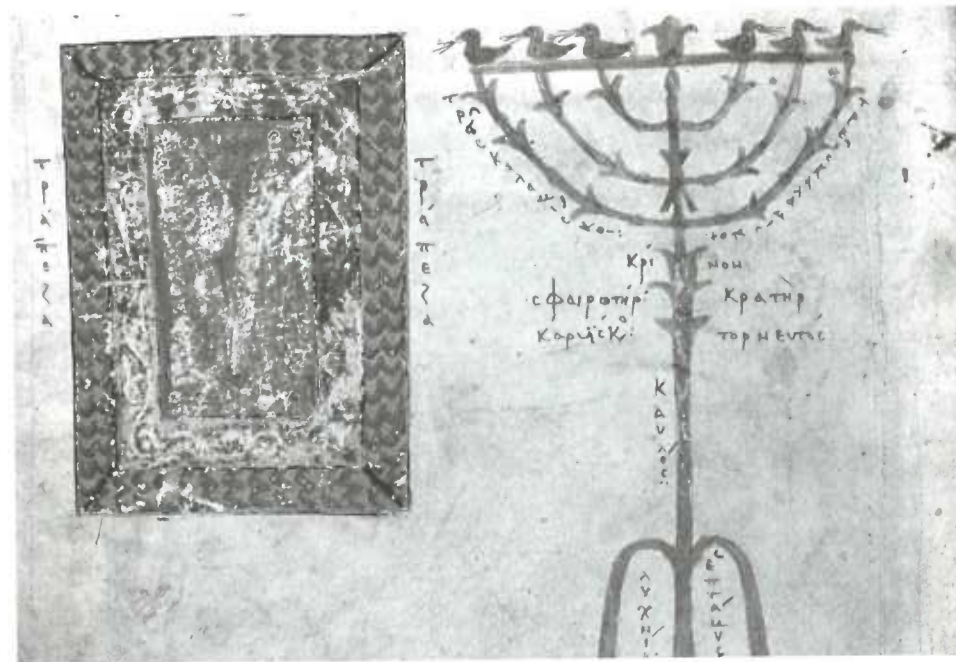


Fig. 2. Table of the Tabernacle and Menorah, Laur.Plut.IX.28, fol. 111v.

account in Exodus 25:23-24. Original to Cosmas is the minute correspondence he draws between the structure of the table and that of the earth. According to him, both the table and the earth are twice as long as wide. The oikoumene corresponds to the middle of the table, the Ocean to the crown around it, and the earth beyond the Ocean to the outer border.²⁴ No other source describes such close correspondence between the structure of the earth and that of the table. Moreover, the description of the table in the *Christian Topography* differs a little from that in the Bible. Both Exodus and the *Christian Topography* describe the middle part of the table as surrounded by a wreath, which in turn is surrounded by a crown. In Exodus, however, another wreath is described surrounding the crown. Cosmas omits this from his description. The discrepancy is difficult to explain, but the divergence from the Biblical text suggests

Octateuchs," *Actes du XVe Congrès International d'Etudes Byzantines II: Art et Archéologie* (Athens: Association Internationale des Etudes Byzantines, 1981), 73-92.

²⁴ *Christian Topography* II:19; II:43; V:34.

that Cosmas followed that text a little less slavishly than has hitherto been believed.²⁵

A very similar structure of the earth, consisting of the oikoumene, surrounded by the Ocean, which in turn is surrounded by the other earth where Paradise is located, is described by Ephrem the Syrian (306-373)²⁶ and Narsai (died 502).²⁷ Furthermore, to illustrate the structure of the earth, Ephrem compares it with the altar built by Moses described in Exodus 27:1.²⁸ The similarity of this comparison to that in the *Christian Topography* suggests that Cosmas was probably inspired by an East Syrian source. Yet the fact that Cosmas compares the earth to the table rather than to the altar is striking; the altar is square, while the table is twice as long as wide, a proportion given to the earth by many ancient geographers.²⁹ This is not the only characteristic of Cosmas' earth which tallies with the accounts of ancient geographers. The notion of the oikoumene as an island was accepted by the majority of ancient geographers.³⁰ The seas, including the Caspian, were usually described as the gulfs of the Ocean.³¹ Moreover, the Black Sea on Cosmas' map is depicted in the form of two semicircles aligned on top of a straight line. The text of Cosmas' treatise offers no explanation for such a shape. However, Strabo and Pliny the Elder both compare the shape of the Black Sea to a Scythian bow made of two semicircular horns joined to one another.³² On

²⁵ However, this is not the only way in which Cosmas' description of the table deviates from the Biblical text. For him, the table is not only the image of the earth, but also a symbol of a year, with the twelve loaves, placed on the table, symbolising the twelve months of the year. For this reason, according to Cosmas, the loaves were divided into four batches of three, one batch in every corner, symbolising four seasons of three months each. This description runs counter to the Biblical text, where in Leviticus 24:5-6 the loaves are described as distributed in two rows of six. See *Christian Topography* III:51; V:20; V:34; IX:8.

²⁶ Ephrem, *Hymns on Paradise*, 1, 8-9; 2, 6.

²⁷ Narsai, *Homilies on Creation*, I:396-398; I:404; III:308-325.

²⁸ Ephrem, *Hymns on Paradise*, 1, 8-9.

²⁹ See Agathemerus, *Geographiae informatio*, 1, 2; Geminus, *Introduction to Phenomena*, 16, 3-5.

³⁰ Exceptions are Herodotus, *History*, 4, 45; Hipparchus, quoted by Strabo, *Geography*, 1, 1, 9; Ptolemy, *Geography*, 7, 5, 2.

³¹ A very widespread error, opposed by Herodotus, *History*, 1, 203; Aristotle, *Meteorology*, 2, 1, 354a; Hipparchus, quoted in Agathemerus, *Geographiae informatio*, 1, 2; Ptolemy, *Geography*, 7, 5.

³² Strabo, *Geography*, 2, 5, 22; Pliny, *Natural History*, 4, 7. See also M. Kominko, "The Map of Cosmas, The Albi Map and the Tradition of Ancient Geography," *Mediterranean Historical Review* 20, 2 (2005), 169.

the whole, Cosmas gives an image of the oikoumene which essentially corresponds to that described by ancient geographers. He correctly locates the sources of the Blue Nile in Ethiopia.³³ Although at some point he confuses the Indus and the Ganges,³⁴ his geography is unaffected by the miraculous origin of the rivers of Paradise; rather, he believes that their sources in the oikoumene are merely the points where they resurface after travelling through the Ocean. In effect he maintains a division between what could be explored and known, that is the oikoumene, and the miraculous, that is Paradise, placed beyond impassable Ocean.

This clear separation is unusual in Late Antiquity. According to the Greek version of Genesis 2:8, Paradise was planted in the east.³⁵ Although some of the Christian writers took Paradise to be allegorical,³⁶ most understood it literally and believed that it was "under this very heaven in the east".³⁷ The fact that Paradise was hidden and inaccessible to men made any discussion of its location quite problematic. The issue was further complicated by the existence of the four rivers of Paradise (Genesis 2:10-14), which connected it with the oikoumene. Three of them—Tigris, Euphrates and Gheon—were easily identified. The first two were called by their own names, while the identification of Gheon as the Nile was prompted by the fact that Greek translators rendered "mouth of Horus" in Jeremiah 2:18 as "waters of Gheon."³⁸ Identification of

³³ *Christian Topography* II:81.

³⁴ *Christian Topography* XI:24.

³⁵ Septuagint renders by *kata anatolas* the Hebrew expression *miqqedem*, which can be taken to mean both *in the beginning* and *in the east*. Aquila, Symmachus and Theodotion all take it to have temporal meaning (Aquila *apo archethes*, Symmachus *ek protes*, Theodotion *en protos*), and so does Jerome, rendering it as *in principio*; but Vetus Latina has *in orientem*.

³⁶ Origen, *Homily on Numbers*, 16,5; *Dialektikos*, 8. See also J. Daniélou, "Terre et Paradis chez les Pères de l'Église," *Erasmian Jahrbuch* 22 (1954), 433-72; M. Alexandre, "Entre ciel et terre: les premiers débats sur le site du Paradis (Gen. 2,8-15 et ses réceptions)," in B. Deforge (ed.), *Peuples et pays mythiques* (Paris: Les Belles Lettres, 1988), 187-224; A. Scafi, "Mapping Eden: Cartographies of the Earthly Paradise," in D. Cosgrove (ed.), *Mappings* (London: Reaktion Books, Ltd., 1999), 50-70.

³⁷ Theophilus of Antioch, *Ad Autolycum*, 2, 24; Epiphanius, *Ancoratus*, *Patrologia Graeca* 58, col. 120 BC. On the medieval and early modern theories concerning the geographical location of Paradise, see M. Alexandre, "Entre ciel et terre," 194-98.

³⁸ This verse from Jeremiah is quoted by Severianus of Gabala to support the

Phison brought more difficulty. Some of the Christian writers believed it to be the Danube,³⁹ others identified it with the Ganges.⁴⁰ Others still made double-identifications: Pseudo-Caesarius believed Phison to be the Danube, which was the same as the Indus,⁴¹ and Epiphanius thought Phison to be the Indus, which was the same as the Ganges.⁴² At the same time it was generally understood that the Tigris and Euphrates have their sources in Armenia, while the Nile flowed from somewhere in Ethiopia. In response to the discrepancy between this information and the theory that the rivers originated in Paradise, writers took various attitudes. Some, like Isidore, disregarded geographical knowledge where it contradicted the Scriptures, or suggested that despite identity of names Euphrates and Tigris are not the real rivers of Paradise.⁴³ But many writers opted for a solution close to that described by Cosmas, and they pictured the rivers of Paradise as flowing underground for the initial part of their course.⁴⁴

We should bear in mind that the idea of a river flowing underground and resurfacing again appears very frequently in ancient sources.⁴⁵ Some rivers are described as travelling not only underground, but also through a sea without mingling their waters with it.⁴⁶ Probably the most cited was the case of Alpheus, which was

identification (*Homilies on Creation*, *Patrologia Graeca* 56, col. 479). Epiphanius, *Ancoratus*, *Patrologia Graeca* 43, col. 117 C. It should be perhaps noted that this identification of the river appears earlier in Jewish sources (Book of Jubilees 2,18; Josephus, *Jewish Antiquities*, 1,38-39).

³⁹ St. Ephrem, *The Commentary on Genesis* 2,4; Severianus of Gabala, *Homilies on Creation*, *Patrologia Graeca* 56, col. 478.

⁴⁰ Avitus, *De Mosaicarum Historiarum Gestis*, *Patrologia Latina* 59, col. 329-30; also Josephus, *Jewish Antiquities*, 1,38; Jerome, *Onomastica Sacra*, 155.

⁴¹ Caesarius, *Dialogi*, *Patrologia Graeca* 37, col. 852.

⁴² Epiphanius, *Ancoratus*, *Patrologia Graeca* 43, 117 C.

⁴³ Isidore, *Etymologies*, 13, 21, 10.

⁴⁴ Philo, *Questions and Answers on Genesis*, 8; Augustine, *De Genesi ad Litteram*, 8,7; Severianus of Gabala, *Homilies on Creation*, 5,6, *Patrologia Graeca* 56, col. 478-79; Theodoret of Cyr, *Questions on Genesis*, 29.

⁴⁵ Pliny, *Natural History*, 5,51 (theory of Juba II concerning the course of the Nile); Strabo, *Geography*, 6,2,9 (Orontes in Syria, the Tigris in Mesopotamia and the Nile in Libya); Procopius, *Buildings*, 2,2,16 (a river that went underground in Dara and re-emerged in Theodosiopolis).

⁴⁶ For example Inopos: see Strabo, *Geography*, 6,2,4.

believed to travel thus from the Peloponnese to Sicily.⁴⁷ The story was so widely known that it was used as a rhetorical figure by Libanius and by Gregory of Nazianzus.⁴⁸ There is in fact an indication that Ephrem, the first writer to picture the rivers of Paradise as travelling through the Ocean and underground, does so under the inspiration of Greek sources; to describe the way in which the rivers reach the oikoumene he uses a Greek loan word *kantharos*.⁴⁹ Ephrem's inspiration for placing Paradise in the earth surrounding the Ocean appears to originate from quite a different, eastern tradition, which we find reflected on the Babylonian world map, where the land encompassing the Ocean is associated with mythical creatures.⁵⁰ It is quite striking that similar land surrounding the Ocean appears on some much later Arabic maps, where it is also associated with a fantastic dimension. Although no direct link can be demonstrated, it appears possible that all these placements reflect a similar tradition. The appearance of the land surrounding the Ocean on the maps is particularly fascinating as these accompany texts which describe a spherical earth, and therefore are difficult to reconcile with the concept of the all-encompassing land.⁵¹ We should also not forget that the eschatological dimension was associated with lands beyond the Ocean in many ancient sources. Circe instructs Odysseus to "cross through the Ocean" on his way to the underworld.⁵² Hesiod locates

⁴⁷ Polybius, *Historiae*, 12,4d; Virgil, *Eclogue* 10,1-5;21-22;47-49 and *Aeneid* 3, 694-696; Ovid, *Metamorphoses* 5,600-41; Strabo, *Geography*, 6,2,4; Seneca, *Quaestiones Naturales*, 3,26,5; 6,8,2; Pliny, *Natural History*, 2,225; 31,55; Pausanias, *Description of Greece*, 5,7,3; Lucian, *Dialogi Marini*, 3,1,1-3,2,11; Ausonius XXIX,91-96; Claudian IV,9,12; Nonnus, *Dionysiaca*, 13,322; 37,172; 42,98; John of Lydus, *De Mensibus*, 4,78,1; Suidas, *Lexicon*, "Adrias"; "Arethusa" (10th century A.D.).

⁴⁸ Libanius, *Oratio* 11,68; Gregory in the Funeral oration to Basil (c. 380); Sermon 43,2; and *On Virtue*, 1,2,10. See also J. Nimmo Smith, "The River Alpheus in Greek, Christian and Byzantine Thought," *Byzantion* 74,2 (2004), 416-32.

⁴⁹ See *St. Ephrem Selected Prose Works*, trans. E. Matthews, J.P. Amar, ed. K. McVey (Washington: Catholic University of America Press, 1994), 101, n. 128.

⁵⁰ A.R. Millard, "Cartography in the Ancient Near East," in J.B. Harley and D. Woodward (eds.), *The History of Cartography*, vol. 1 (Chicago: University of Chicago Press, 1987), 111-12.

⁵¹ See G.R. Tibbets, "Later Cartographical Developments," in *The History of Cartography*, vol. 2.1, 149-55; S. Maqbul Ahud, "Cartography of al Sharif al idrisi," *ibid.* 160-63; 170-71.

⁵² Homer, *Odyssey*, 10,508.

the Isles of the Blessed "beyond glorious Ocean,"⁵³ and likewise beyond it lies his island of the heroes.⁵⁴

Neither the association of the mythical or eschatological dimension with the land beyond the Ocean, nor the concept of rivers travelling underground or under the sea, were foreign to Greek and Latin sources. And yet Christian writers did not use them the way Cosmas did, to detach Paradise from the oikoumene. One conceivable reason for this difference could be simply that they did not believe the oikoumene to be surrounded by Ocean. But such reasoning would seem to be false. Although the Ocean surrounding the inhabited earth is not mentioned in the Biblical text, the Biblical description of the gathering of waters below the firmament in one place was sometimes taken to indicate that only a single body of waters can exist, and thus all seas must be interconnected. This concept probably corroborated the idea of the existence of one surrounding Ocean, described by many exegetes.⁵⁵ Widespread acceptance of this idea is confirmed by a passage of the *Soghita* written for the dedication of the cathedral church in Edessa; here the church, located between a river and a pond, is described as follows: "Indeed, it is an admirable thing that in its smallness it should resemble the great world, not in size but in type; waters surround it like the sea."⁵⁶

In consequence it is difficult to understand why the Christian writers did not take the chance to solve the difficult issue of the relationship between the oikoumene and Paradise by placing the latter beyond the Ocean, as Cosmas did. No doubt such a placement could have been facilitated by a perception of the Orient as fabulous and fantastic, one stemming largely from a tradition inspired by the accounts of Ktesias and the Alexander historians.⁵⁷ This is not to say that the Orient was invariably perceived as fantastic and mythical.

⁵³ Hesiod, *Theogony*, 215, 274, 294.

⁵⁴ Hesiod, *Works and Days*, 170-174.

⁵⁵ The Ocean surrounding the earth is explicitly mentioned by Ephrem, *Hymns on Paradise*, 1,10; Basil, *Hexamaeron*, 35E-36E; Eusebius of Caesarea, *In Praise of Constantine*, 6,6; Narsai, *Homilies on Creation*, 2,34-56.

⁵⁶ Translation: K.E. McVey, "The Domed Church as Microcosm: Literary Roots of an Architectural Symbol," *Dumbarton Oaks Papers* 37 (1983), 98.

⁵⁷ J.S. Romm, *The Edges of the Earth in Ancient Thought. Geography, Exploration and Fiction* (Princeton: Princeton University Press, 1992), 86-91; 93-94.

There are sources which describe it without making any references at all to miraculous elements, but they either ignore the issue of Paradise altogether, like Orosius,⁵⁸ or, like Cosmas, they locate it beyond the Ocean. Nonetheless, the tradition of the miraculous Orient was clearly strong enough to make the location of Paradise there a viable theory. For Cosmas, the combination of the placement of Paradise beyond Ocean, and the description of the rivers of Paradise as travelling underground, effectively allowed him to maintain a scientific image of the oikoumene. Consequently, in contrast to many other Christian writers, he does not provoke a clash of science and religion, but merges them in a quite harmonious way. His oikoumene is unaffected by the miraculous origins of the rivers of Paradise, and the presence of Paradise does not change the Far East into a fantastic land. In fact Cosmas has a particular interest in the eastern confines of the earth, describing not only Sri Lanka and the Indian subcontinent, but also, very briefly, China.⁵⁹

The *Commentary on the Apocalypse* by Beatus of Liebana, composed around 776, provides an interesting comparison to the treatise of Cosmas. Both the *Christian Topography* and the *Commentary* of Beatus were created with accompanying illustrations. Both are essentially works of Biblical interpretation; and both, although to different degrees, show interest in a physical world, as is attested by the presence of maps. Moreover both use a variety of sources, although Beatus' personal input seems to be much smaller, for he himself declares that his *Commentary* is essentially a collection of excerpts from works of holy fathers.⁶⁰ As in the case of the *Christian Topography*, the original manuscript of Beatus' *Commentary* is lost. There are, however, 26 entire or fragmentary illustrated copies known. Only 14 of them contain a map, but the text makes it clear that a map to illustrate the mission of the apostles was an integral part of the work.⁶¹

⁵⁸ See Y. Janvier, *La Géographie d'Orose* (Paris: Belles Lettres, 1982), 153-64.

⁵⁹ M. Kordosis, "The Limits of the Known Land (Ecumene) in the East According to Cosmas Indicopleustes. Tzinista (China) and the Ocean," *Byzantion* 69.1 (1999), 99-106; Zhang Xu-Shan, "The Name of China and its Geography in Cosmas Indicopleustes," *Byzantion* 74.2 (2004), 452-62.

⁶⁰ J. Williams, *The Illustrated Beatus*, v. I, 31 ff. See also E. Edson, *Mapping Time and Space. How Medieval Mapmakers Viewed their World* (London: The British Library, 1997), 149-50.

⁶¹ See: J. Williams, "Isidore, Orosius and the Beatus Map," *Imago Mundi* 49 (1997), 8.

Unlike the case of the *Christian Topography*, not all the maps preserved in Beatus' manuscript are the same. All share some characteristics. East is always at the top, the inhabited earth is surrounded by Ocean, and Paradise appears on the eastern side of oikoumene.⁶² Nevertheless, some maps show the inhabited earth as rectangular, while in others it is oval.⁶³ It has been argued that the rectangular maps are closer to the archetype. Not only does the oldest manuscript of the *Commentary* contain a rectangular map, but also in two cases where we know the tenth century model for a later map, the rectangular shape of the original gave way to an oval in the copy.⁶⁴ Whether or not the archetype map was rectangular, an important point is that Beatus' maps are always elongated on a south-north axis, which constitutes a break from the tradition of depicting the earth either as round, or as stretching from east to west.

All Beatus maps share one more element: an additional land south of the oikoumene, divided from it by a narrow strip of waters identified on some of the maps as *Internal Ocean* or as the *Red Sea*. The land itself is also variously labelled. On the map in the oldest manuscript (Pierpont Morgan Library), it is inscribed as "A neighbouring desert land unknown to us because of the heat of the sun." In later copies, however, an inscription identifies it as the fourth part of the world, unknown on account of great heat, where legendary Antipodes live. In one of the copies (Beatus, Burgo de Oisma, Arch. De la Catedral, Cod. 1, ff. 34v-35), a figure of a *sciapod* accompanies the inscription.

Interpretation of this land has been much debated, but if we suppose any continuation between Beatus maps and earlier geographical traditions, we can only assume that this is indeed the land of antipodes, since no other land was ever located south of the oikoumene. However, as has been already pointed out, the depiction of the antipodean continent is against the very purpose of the Beatus' map, which was to illustrate the mission of the Apostles. According to the Gospel of Mathew 28:19 and to the Acts of Apostles 2:4-5, they were to carry the Gospel to all people. The antipodes were believed to be separated from the oikoumene by the Torrid Zone, impassable on

⁶² D. Woodward, "Medieval Mappaemundi," in *The History of Cartography*, vol. 1, 303-304; E. Edson, *Mapping Time and Space*, 151.

⁶³ D. Woodward, "Medieval Mappaemundi," 303-305.

⁶⁴ J. Williams, "Isidore, Orosius and the Beatus Map," 23-26.

account of great heat; so had they existed, this mission would be impossible to fulfil.⁶⁵ Furthermore, beginning with Augustine, Christian sources rejected the idea of antipodes for the reason that their inhabitants could not possibly be descendants of Adam, and therefore were not redeemed by Christ.⁶⁶ It was only Isidore who reclaimed antipodes for the Christian world, although he subjected them to a curious change. At one point in his *Etymologies* (IX,2,133) he writes that, according to some sources, antipodes are the people "on the other side of the earth", adding that there is no reason to believe this. In another passage (XI,3,24) he describes antipodes as the inhabitants of Libya, who have their feet facing backwards and eight toes; this is a meaning of the term which he clearly finds much more credible. The last passage of the *Etymologies* (XIV,5) to be noted in this connection is that from which the inscription identifying the southern land on some of the Beatus' maps is taken. It follows on from a description of the marvels and fantastic beasts of Ethiopia: "There are two Ethiopias: one near the rising sun, and the other toward the west in the area of Mauritania. In addition to these three parts of the earth there is a fourth, situated on the other side of the inner ocean, to the south, which is unknown to us because of the heat of the sun. It is said that the legendary antipodes live there."⁶⁷ It is not entirely clear how this passage is to be interpreted, for the antipodes mentioned here are not described as inhabitants of Libya, nor do they seem to be the antipodes of the ancient geographies separated from the oikoumene by the impassable outer Ocean. Rather, these antipodes have moved closer to the oikoumene, and have started to inhabit its edges, but at the same time they retain their legendary and fantastic status. Antipodes inherited from ancient geography were not acceptable from the point of view of Christian dogma. Curiously, instead of denying their existence, Isidore and creators of Byzantine maps reinterpret them, and make the inhabit-

⁶⁵ E. Edson, *Mapping Time and Space*, 153-55; J. Williams, "Isidore, Orosius and the Beatus Map," 17-23.

⁶⁶ Augustine, *De Civitate Dei* 16,9. See also Procopius of Gaza, *Commentary on Genesis*, *Patrologia Graeca* 87, col. 69 B. On the problem of the attitude of later Latin sources to the antipodes, see V. I. J. Flint, "Monsters and Antipodes in the Early Middle Ages and Enlightenment," *Viator* 15 (1984), 65-80.

⁶⁷ J. Williams, "Isidore, Orosius and the Beatus Map," 21-23. On the perception of southern confines of the inhabited earth as fantastic, see J.S. Romm, *The Edges of the Earth in Ancient Thought*, 49-59.

ants of the other hemisphere into fantastic dwellers of the edge of the known world.

The maps of both Cosmas and Beatus seem to be based on a combination of ancient geographical traditions and Biblical interpretation. For Cosmas, a clear separation between these two sets of sources is apparent. The image of the oikoumene, which can be subjected to empirical research and scrutiny, is based on ancient sources. By contrast, everything beyond the impassable Ocean is a subject of revelation, and remains beyond the reach of human science and understanding. On the Beatus map there is no such division, however. His maps are something of a paradox. On one hand the continent of the antipodes, which for ancient geographers was inaccessible, becomes the fourth part of the inhabited world and thus open to access; meantime on the other hand the presence of Paradise clearly indicates limitations of human knowledge even within the oikoumene.